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**DIGEST**

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THE OFFICIAL U. S. ARMY MAGAZINE



## ARMY INFORMATION DIGEST

### THE OFFICIAL MAGAZINE of the DEPARTMENT OF THE ARMY

The mission of ARMY INFORMATION DIGEST is to keep personnel of the Army aware of trends and developments of professional concern.

THE DIGEST is published under supervision of the Army Chief of Information to provide timely and authoritative information on policies, plans, operations, and technical developments of the Department of the Army to the Active Army, National Guard, and Army Reserve. It also serves as a vehicle for timely expression of the views of the Secretary of the Army and the Chief of Staff and assists in the achievement of information objectives of the Army.

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IN AN ERA acutely conscious of the rapid obsolescence of machines and weapons, it is worth emphasizing that individual combat skills and stamina are also perishable resources which must be constantly renewed by continuous training. Advancing up, over and through the obstacle platform on front cover, trainees at the Engineer Center, Fort Belvoir, Virginia, find that not only are muscles put in motion, alertness is increased and individual confidence enhanced.

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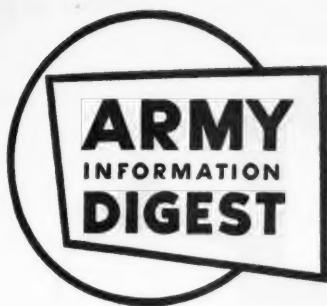
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For explanation of abbreviations used, see AR 320-50.



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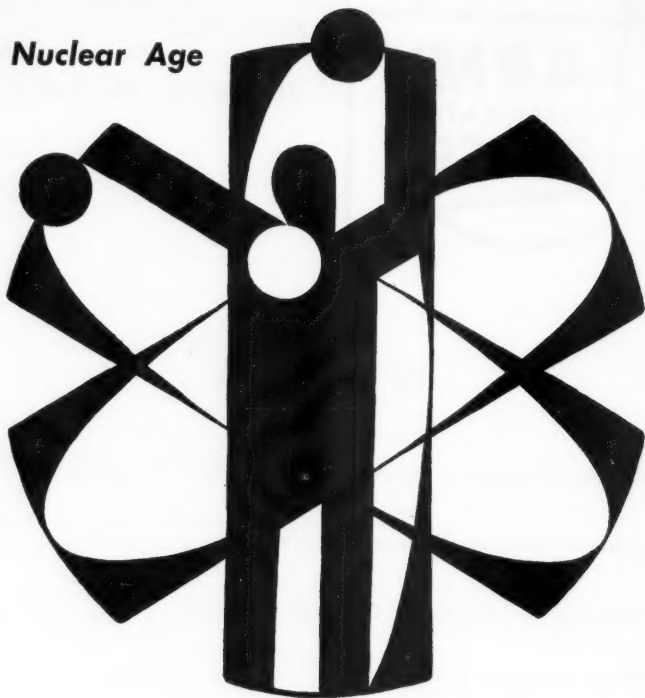
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## The Army's Posture

### in the Nuclear Age



## WHERE WE STAND TODAY

The Honorable Charles C. Finucane

**O**UR NATION'S accomplishments in recent years in adopting the triumphs of the laboratory to military use have permitted us to develop the greatest peacetime strength in the history of our country.

We have a small but strong, versatile, flexible and highly mobile professional Army with firepower vastly superior to that which

existed ten years ago. This professional Army is backed by the largest and best trained reserve forces in our history.

We also have a powerful Air Force and a great Navy with its splendid Marine Corps.

Together they form a magnificent tri-dimensional defense team which has the power to deal with any eventuality.

Within this defense team lies an absolute deterrent to general war. Irrespective of how many bombers we have *vis a vis* the Russians, and irrespective of what state of missile development we have *vis a vis* the

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*THE HONORABLE CHARLES C. FINUCANE, Under Secretary of the Army, included these remarks in an address before the New Haven, Connecticut, Chamber of Commerce, 11 February 1958.*



Russians, the numbers game is not important. What is important is that we have sufficient strength now to blast any aggressor off the face of the earth. Every potential aggressor knows this.

This deterrent is found, primarily, in the retaliatory power of our Strategic Air Command and the aircraft of our Navy. Together, they present a prospect of virtual annihilation to any potential aggressor bent on plunging the entire world into a suicidal all-out nuclear war. Part of this bomber force is kept in the air at all times. Assuming a surprise attack on our bases with a resultant marked reduction in our striking power, those bombers in the air would be immediately on the way in sufficient strength to accomplish their retaliatory mission. Every country in the world knows this. It is not a secret or a threat, but a constant reminder of our intent to maintain peace.

THE Army, by virtue of its overseas deployment, also contributes to our deterrent power. In Europe, our magnificent Seventh Army—undoubtedly the most powerful Army ever fielded by this country in time of peace—maintains, in cooperation with our Allies, a ground defense of the NATO countries against Communist aggression. In the Far East, the Army also maintains strong forces to help block aggression in Korea. This "first line of defense" is essential as a bulwark against aggression and is a constant and visible reminder to any potential aggressor that, if he attacks, he will be met at once by an American soldier.

Never let it be forgotten that the American soldier standing in the

path of aggression is the keystone to the preservation of peace. As our very able Army Chief of Staff, General Maxwell D. Taylor, has often pointed out—"No armed aggression has ever been initiated within range of the guns of the United States Army."

THE maintenance of this deterrent power is necessary in consideration of the fact that general, or all-out nuclear war, is our *most dangerous* threat. Limited war, of the Korean type, however, is our *most likely* threat.

As evidence, let me point out that in addition to Korea, the world has seen some fourteen limited or small wars since World War II ended. These are the Indonesian War of 1945-47, the Chinese Civil War of 1945-49, the Indo-Chinese War of 1945-54, the Malayan War of 1945-54, the Communist Guerilla Warfare in Greece of 1946-49, the Kashmir Dispute between India and Pakistan of 1947-49, the Israeli-Arab League War of 1948-49, the Guatemala Revolt in 1954, the Argentine Revolt of 1955, the Algerian Insurrection of 1956, the Israeli Blitz of Gaza in 1956, the Anglo-French Seizure of Suez in 1956, the Russian Suppression of Hungary in 1956, and the conflict

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*"The difference between where we now stand and where we want to be, from the Army's viewpoint, does not require a revolution in approach, concept or organization; since we already have started through that revolution."*

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*"We know that, while there have been understandable budgetary limitations in our defense programs, we have made magnificent achievements in building our defense machinery. These achievements are in our arsenals now and are growing."*

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in Muscat and Oman in 1957.

These limited wars must not be allowed to spread, and we must retain conventional forces in our defense structure for such contingencies. In the event of our involvement in limited war, the Army, of course, will play the major role.

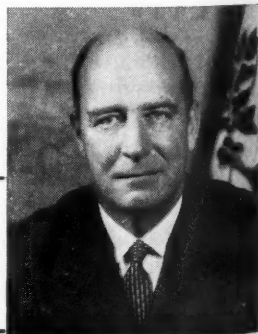
IN preparing for this eventuality, the Army has made significant progress in the field of organization, firepower and mobility which are at a premium on the atomic battlefield. For example, all of our divisions now have an atomic delivery capability—something which did not exist a few years ago. There also has been a tremendous increase, at Corps and Army level, in the missile and rocket support for these divisions.

Our missile and rocket programs provide us with tremendous increase in firepower. In the short range field we have the Dart, the Honest John, and the Lacrosse. In

the longer range field we have the Corporal and the Redstone. Each of these weapons, from the short range Dart which is an anti-tank missile, to the long range Redstone, is designed to meet a specific requirement in a 200-mile range spectrum. They are not duplicating in any way, either with each other or in comparison with, missiles developed by the Air Force or the Navy.

THE above-mentioned items are all "first generation" hardware which is either now, or will soon be, operational in the hands of our troops. Coming along behind this hardware are "second generation" missiles which, eventually, will replace the "first generation." Development of this "second generation" hardware has been made possible by technological breakthroughs in the field of solid propellants.

Both the Corporal and the Redstone missiles utilize a liquid propellant. This has created a problem as far as field handling and speed of firing is concerned since each missile must be fueled in the field before being fired. This fueling process has required complicated handling equipment such as



**THE HONORABLE CHARLES C. FINUCANE** is Under Secretary of the Army.

LOX—or liquid oxygen—generators which, in turn, have tended to reduce their mobility. To overcome these difficulties, the Army is developing the Sergeant, a solid propellant missile, to replace the Corporal and, perhaps even more significant, the Pershing, another solid propellant ballistic missile, to replace the Redstone.

The Pershing, when completed, will be the most formidable weapon in the Army's arsenal. Recent advances in solid propellant technology make it possible to make the Pershing missile smaller, lighter, even more mobile than Redstone, and with a greater range. It will provide the Army with a more versatile and flexible weapon with which to discharge its role on the battlefield of the future.

MISSILES also provide us with improved surface-to-air firepower. For defense against low-flying aircraft, the Hawk missile has been developed and will soon be operational. Hawk is capable of operating both in the continental United States air defense complex at fixed installations as well as with the mobile combat troops of a field Army. It may be transported on the highway with a small number of vehicles, or flown by helicopter or fixed-wing aircraft. Its guidance techniques are unusually successful in causing it to intercept aerial targets even at extremely low altitudes where other techniques have been found deficient.

The letters H-A-W-K stand for "Homing All the Way Killer" which is precisely what this missile does. It locks on its target and stays on it despite any evasive tactics which may be taken. When

systems such as Hawk become operational, close combat support aircraft will constitute a greatly diminished operational threat to ground troops.

FOR defense against high-flying aircraft, we rely primarily on the Nike family of weapons of which the Nike-Hercules is scheduled soon to become the principal member. It will replace the Nike-Ajax which is now emplaced around many critical points in our Nation.

Just as the initial Army develop-

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*"Prior to World War II, when technological change was slow, we could rely on a weapons system lasting for many years. Now, we have to deal with a rate of obsolescence which is phenomenal. . . . This has made and will continue to make our research and development and new procurement and production programs enormously more complicated and increasingly expensive."*

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ment of Nike-Ajax anticipated the growing enemy air threat over ten years ago, the development of Nike-Hercules anticipated the capabilities of higher performance aircraft than those currently operational. Nike-Hercules is now being produced to fulfill requirements for a surface-to-air missile of longer range and greater altitude. It can be armed with an atomic warhead which, with its vastly increased radius of lethality, will certainly preclude massed bomber attacks as we have known them in the past.

Nike is not a single weapon but a family of weapons in which the new evolves naturally from experience gained with the old. Coming along behind Nike-Hercules is the third member of this family—Nike-Zeus, currently being developed as an anti-missile missile for the defense of the continental United States against intercontinental ballistic missiles traveling at tremendously high altitudes and hypersonic speeds.

Nike-Zeus was named, perhaps prophetically, after the supreme deity of Greek mythology who punished wrongdoers. Components are now in being and the complete system is now under development. When it becomes operational, we shall then be able to bring under fire any intercontinental ballistic missile directed at us.

ANOTHER effort underway in the anti-missile field is Plato which is to be used in the defense of field armies against ballistic missiles. The Plato system will make use of some components of the Nike-Zeus missile system and will be just as effective in its own area of operations. The most distinguishing feature is that Plato must be mobile to permit it to keep up with the field Army, while Nike-Zeus will be fired from fixed installations.

Our experience with the Nike family of weapons serves, perhaps,

to highlight the basic reason *why* we are where we are today. Technological advances are coming along so rapidly that we cannot rely on any weapons system lasting very long. Prior to World War II, when technological change was slow, we could rely on a weapons system lasting for many years. Now, we have to deal with a rate of obsolescence which is phenomenal when compared with the past. This has made and will continue to make our research and development and new procurement and production programs enormously more complicated and increasingly expensive.

IN considering where we stand today, defense-wise, we are inclined to forget sometimes that we are not alone in the fight against Communism. We have the vast resources, skills and bases of our Allies around the world to help us in this struggle. Many of our Allies need help, however, in developing their military potential. To provide this help, the Army is participating in a world-wide system of military assistance advisory groups and training missions designed to develop local national forces for their own defense.

As a result of this military assistance program, our Allies around the globe can provide the Free World with the equivalent of 200 divisions. Continued development of their armies should enable them, at a minimum, to insure their own internal security and, as a maximum, provide us with added strength in being to deter or delay an enemy attack in areas where, otherwise, military weakness might encourage aggression.

Eventually, as their forces de-

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*"Sputnik . . . has indicated to us that an acceleration is necessary to insure technological superiority—not parity—between us and the Russians."*

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velop in strength, we hope that we can reduce the number of our troops from this first line of defense and support our Allies with powerful missile commands. On the other hand, for the foreseeable future, there will be a requirement for U. S. Army combat forces to be located in strategic overseas areas.

We should never lose sight of the fact that America's potential enemies are land powers. Communist forces are so deployed that, even if their homelands were devastated, their armed forces probably could continue to fight effectively for considerable time. If, during that time, Communist forces conquer the lands of free countries, they could set the economies of the occupied areas to work supplying their needs. The measures required to liberate these occupied territories would not be attractive to the people of the Free World. This possibility makes it abundantly clear that the enemy's ground forces in war must be defeated as close to the Iron and Bamboo Curtains as possible; it re-emphasizes the importance we attach to the continued development and strengthening of the armies of our friends.

AFTER this review of where we stand today, and why, let us consider for a moment where we are going.

In certain respects, Sputnik has cleared the air for us. We know now more certainly than ever before that we are, and have been, headed in the right direction. We know that, while there have been understandable budgetary limitations in our defense programs, we have made magnificent achieve-

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*"The maintenance of . . . deterrent power is necessary in consideration of the fact that general, or all-out nuclear war, is our most dangerous threat. Limited war, of the Korean type, however, is our most likely threat. . . . In the event of our involvement in limited war, the Army, of course, will play the major role."*

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ments in building our defense machinery. These achievements are in our arsenals now and are growing.

We also know that despite these accomplishments, we must go farther and, above all, faster. We know that we can no longer measure our over-all defense effort in terms of what we *want* to spend or what we would *like* to spend, but in terms of whatever is necessary to insure our safety and well-being.

We are moving from a position of relative strength to one of even greater strength. Indicative of this trend is the fact that we have already started production of two intermediate range ballistic missiles, the Army-developed Jupiter and the Air Force-developed Thor, and arrangements are being made for them to be based in selected areas overseas.

We have seen the successful limited objective test firing of the Air Force's Atlas intercontinental ballistic missile. We have also seen the successful testing of various components of the Navy's Polaris, an intermediate range ballistic missile which is designed to be launched from a submarine, either



above or below the surface of the water. The Polaris, when combined with a nuclear-powered submarine, will provide us with hidden, undetectable, mobile firepower to an unprecedented degree.

Within the Pentagon we have seen the creation of an Advanced Research Projects Agency to coordinate and accelerate our outer space, satellite and anti-missile missile programs.

ALTHOUGH Sputnik has made us reexamine our defensive posture, there is nothing so radical in Sputnik which would indicate the need for a significant change in our concept of future war. From the Army's standpoint, at least, the importance of missiles and their great power was anticipated during World War II; and the fundamental revamping of the Army's organiza-

tion structure—to meet the requirements of both missiles and nuclear weapons—was begun some time ago. This should be extremely reassuring to the American people. We have not been caught flat-footed.

The difference between where we now stand and where we want to be, from the Army's viewpoint, does not require a revolution in approach, concept, or organization; since we already have started through that revolution. Sputnik, however, has indicated to us that an acceleration *is* necessary to insure technological superiority—not parity—between us and the Russians. For the immediate future, it means the expenditure of more funds for research, development, and production, to ensure our technological superiority and with it the safety and security of the Nation.

#### ON KEEPING PACE WITH TECHNOLOGY

"The rapid succession of breakthroughs in scientific fields since World War II makes it mandatory that your Army keep pace with the times. Each technological advance carries a stern warning that to remain immobile in thought and action invites destruction."

General W. G. Wyman, Commanding General,  
U. S. Continental Army Command,  
in an address before the Monterey County  
(California) Chapter,  
Association of the United States Army,  
18 February 1958.



## THE ARMY MUTUAL AID ASSOCIATION

As a member of the Army Mutual Aid Association for over 30 years, I have been happy to note its constant growth in size and financial strength. The Association has always operated as an adjunct of the Army and, as demonstrated by its constantly increasing membership, has effectively displayed its ability to assist in handling in the insurance affairs of its officer members and their families. It is, therefore, a pleasure to take this opportunity to commend our Association and its work.

Toward the close of 1957, the Army Mutual attained the objective of having \$100 million of insurance in force. This is an important milestone for any life insurance concern and is even more significant for an Association such as ours with its limitation on the amount of insurance which may be issued to each member.

Now that career Reserve officers may become members, the Army Mutual is truly the life insurance representative of the professional Army officer. I urge every eligible officer to consider carefully the benefits of membership, and I recommend that each member assure that all eligibles in his organization or unit are informed of the advantages of joining.

The Association's assistance in planning for the protection of dependents, the prompt payment of \$1,500 of the benefit, the substantially increased benefits now being paid, and the experienced and thoughtful help and guidance furnished to bereaved families make the Army Mutual an essential element of the life insurance program of every career officer.



*Maxwell D. Taylor*

MAXWELL D. TAYLOR

General, United States Army

Counsellor to the Army Mutual Aid Association

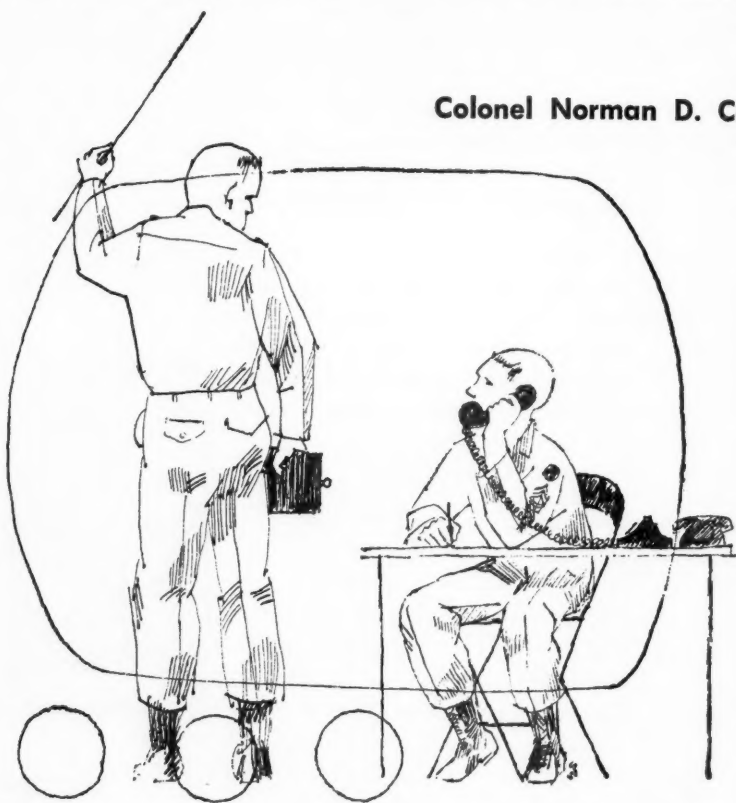
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*The battlefield of the future is an ever-present reality in*

# Planning Maneuvers and Exercises

**Colonel Norman D. Carnes**



**COLONEL NORMAN D. CARNES**, Infantry, is Chief of Maneuvers Branch, Plans and Operations Division, G3 Section, Headquarters, United States Continental Army Command, Fort Monroe, Virginia.

**I**N THE world of football much of the preparation for the "Big Game" on Saturday takes place in the mid-week scrimmage. Here the home team polishes its defense and offense and studies the opponents' plays. For the U. S. Army in peacetime, field exercises and

maneuvers provide the "scrimmage" that prepares the "quarterbacks," the remainder of the backfield, and the line for the realities of actual combat. These exercises provide the opportunity to try new plays and new formations, and to attain that essential ingredient of success—teamwork.

The United States Continental Army Command (USCONARC) field exercise and maneuver program provides a variety of types to include division exercises, special operations such as amphibious, jungle, and arctic, and a series of command post exercises combining numerous agencies.

The nature of battlefields of the future is recognized, and is injected into all exercises. With future military operations conducted over extensive areas, rapid concentrations of force from widely dispersed positions will be required. Concepts of fixed and inflexible organizations for combat must be discarded. Compact lines of defense and massive concentrations of personnel and equipment for offense will be obsolete in view of massed atomic and conventional fire capabilities.

All field exercises are therefore conducted under assumed tactical conditions providing an extensive two-sided tactical atomic weapons capability.

WITHIN continental United States, emphasis is being placed on division exercises conducted on military reservations at the division home stations. These exercises, for the most part, will be a series of battle group or task force exercises involving rapid movement to objective areas, an intense offensive

action, and rapid deployment from the designated area.

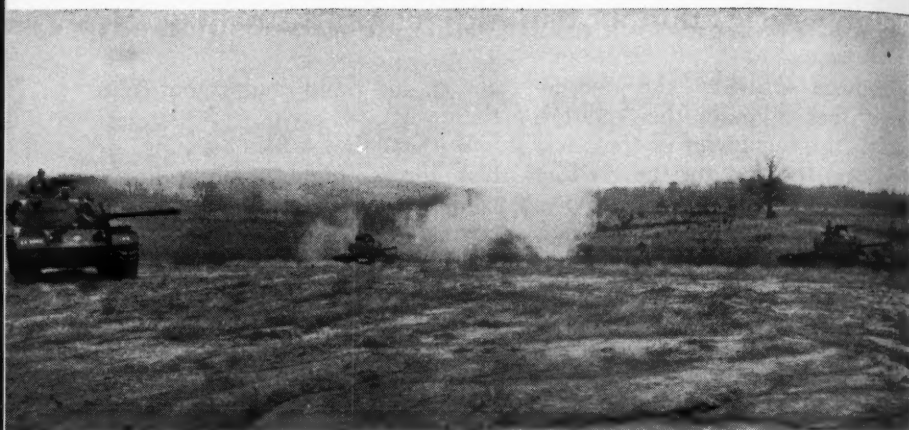
Within the battle groups or task forces, highly mobile forces composed of integrated combat, combat support, and service elements, with the potential of effective atomic and conventional fire power, will be organized. These forces will be entirely mobile, self-contained, and completely equipped with facilities for voice radio communications. They will be capable of varied types of actions to include offense, defense, retrograde reconnaissance, and security.

Some training and use of three types of these forces has been conducted. One type is an approximate platoon-size organization containing three rifle squads, a weapons (machine gun) squad, mortar squad, and recoilless rifle squad.

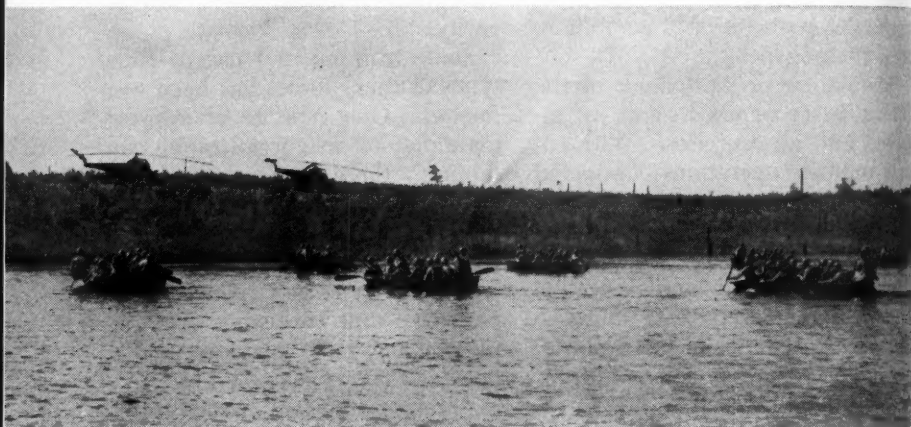
Another type is a reduced company-size unit consisting of a rifle platoon, a tank platoon, and a heavy weapons platoon.

A third force is a battalion-type organization consisting of a rifle company, a tank company, a direct fire support company or battery using AA AW type weapons and AT weapons, and an indirect fire support company or battery using howitzers and mortars. In addition this force will have engineer, aviation, and signal detachments.

Armored division doctrine has recognized the fundamentals of this concept for several years. The emphasis currently being placed on development of this type operation as part of the field exercise program will extend the concept to other type units. The above type units are considered a practical



**BY LAND, WATER, AIR—Troops on maneuver train as they test new concepts of warfare, as this armored unit is doing.**



**Reinforcements cross a river while helicopters bring in supplies and more troops. Below, air-landed infantrymen establish a beachhead across the stream.**



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approach to the concept, and are not intended to be fixed and inflexible units.

COMMAND POST exercises also will be stressed at all levels. Command post exercises at ZI Army level will be conducted at least twice a year, and will involve extensive participation by the reserve components. Many weeks of preparation are necessary to ensure that essential details are provided for during the actual play of the exercise. Active Army units will conduct the actual play four or five days prior to the phasing-in of the reserve components—a necessary step since in most cases full-time reserve participation must be confined to a weekend.

Each year CONARC conducts a logistical type CPX in which advanced classes from all administrative and technical service schools participate. The exercise, designated LOGEX, is held at Fort Lee, Virginia.

LOGEX involves extensive participation by the Navy and Air Force as well as representation from the State Department. Emphasis is placed on intra-Army technical and administrative service team play. The exercise also demonstrates the interservice cooperation required of Army, Navy and Air Force elements to provide logistics support in a theater of operations.

Another type will be the command post exercise-field training exercise (CPX-FTX)—in effect, a combination of a CPX and a maneuver. It will consist of a larger unit headquarters, independent corps or field army, and subordinate division units represented by

a CPX headquarters which includes the staff sections of division headquarters, representation from battle groups or combat commands, communication facilities, and sufficient administrative personnel to support the player unit.

Some units will be at full strength with full equipment. These units generally will be newly developed ones, and the exercise will provide a medium for determining doctrine and techniques for their employment and organization. Extended distances will be stressed.

Obviously these types of exercises require access to large areas with a usable road net—in itself a difficult and costly problem.

An important part of the Army's exercise and maneuver program is its participation in the Atomic Energy Commission program at the Nevada Proving Ground. Camp Desert Rock, the Army's installation in this area, will receive increasing emphasis as additional Army participation is planned for the future programs that may be conducted.

Amphibious operations will be conducted periodically to keep abreast of changes in techniques and doctrine resulting from new type units and organizations. These exercises, it appears, will be in the nature of CPX-FTXs. Obviously they must be planned well in advance to permit necessary coordination with the Navy. Requirements for sea transportation and other Naval support must be determined 36 months in advance.

CONTINUATION of annual exercises in conjunction with U. S. Army forces in Alaska and Panama



is planned. Again, participation in these exercises will involve small units specially organized for the mission envisioned.

In Alaska, the art of cold weather and mountain operations will be kept alive, to include training in travel to the area by land, sea and air. The same principle applies to jungle training and operations in Panama.

FUTURE exercises will stress the importance of the role of junior leaders and their development. The small and mobile forces concept outlined above, as well as the requirement for operation over extended distances, mean that more authority must be delegated and more responsibility given to small unit commanders, who will be operating in most cases independent of detailed supervision.

Senior commanders must take a new look at the basic principles of telling a subordinate the who, what,

*During a winter training operation, a cargo net is attached to a helicopter for delivery of supplies.*



where, and when of a task, providing him the means to do the task and avoiding over-supervision of every move the commander makes in performing that task. Small exercises must cultivate and stress initiative and imagination of junior commanders. Leadership principles as outlined in FM 22-10 must be applied in spirit and letter by all leaders. An effective exercise and maneuver program will contribute materially to this development.

HEADQUARTERS, USCON-ARC plans an exercise program three years in advance. Primary factors involved in this planning are the availability of units and their training status. Most of the exercises normally occur during the spring or fall months. This is due to climatic conditions in part, and also to the requirement that units participate in reserve component training programs during the summer months.

Upon approval of the exercise program by Department of the Army for a fiscal year, directives are issued by the Commanding General, USCONARC designating the Exercise Director (usually an Army Commander) for each exercise. The directives—issued approximately six months prior to the actual exercise—are broad and general in nature, and set forth any special requirements such as an evaluation of a type organization or procedure.

The Exercise Director now develops a plan for the exercise. This plan receives thorough staffing at Headquarters, USCONARC to insure that it accomplishes the desired objectives. Certain refinements may occur due to changes in





*A safety team checks to see if the forward area is safe for penetration after atomic bomb blast during Exercise Desert Rock VI.*

troop availability. Upon approval of the plan, the director headquarters completes the scenario and issues necessary instructions.

Participating units are selected on the basis of their availability and state of training. Occasionally it is necessary to organize provisional support units, such as an ordnance company or engineer company, to perform a specific series of operations connected with refinement of a new concept. Effort is made to afford field training experience to as many units as possible.

Exercise names are selected appropriate to the area in which the exercise is to be conducted. The history of the area, as well as local geographical and climatic conditions are considered. Thus an exercise designation may derive from a terrain feature or the general configuration of the area. The division exercise currently planned for the

4th Infantry Division in the Yakima, Washington, area, for example, bears the name DRY HILLS, in keeping with the terrain of that region. The tradition of the participating unit is also frequently considered. Exercise All American conducted in December 1957 by the 82d Airborne Division, took its name from the "AA" contained in the division insignia.

The directive provides for attendance of official observer personnel. Observer spaces are allocated to interested agencies, including the technical services and representatives from service schools. Because of the administrative problem of providing billeting, mess and transportation facilities, effort is made to keep the number of observers to a minimum and still accomplish the desired result. Desirably, those who do attend should remain for as long a period as possi-

ble, in order to receive a more realistic and factual impression.

Services and facilities of the Aggressor Center at Fort Riley, Kansas, are used to the maximum extent. Besides providing special uniforms, dummy equipment, sound devices and other items of equipment to enhance the realism of an exercise, representatives of the Center assist the Exercise Director Headquarters in the formulation of the Aggressor force that will oppose the U. S. Forces. They also prepare recommendations pertaining to special units that may be required for special operations such as guerrilla activity, psychological warfare effort, prisoner of war processing, and the like.

UMPIRING and control of an exercise is conducted in accordance with FM 105-5 insofar as availability of personnel, facilities, and equipment permit. Upon completion of the detailed plan and scenario by the Exercise Director Headquarters, umpires are assembled for intensive detailed instructions in the provisions and objectives of the exercise. Especially stressed are their responsibilities and functions in causing certain conditions and situations to occur.

Effort is made to procure an entire umpire packet from one unit so as to capitalize on established teamwork. In the case of a special unit, umpires must be selected according to their special skills and familiarity with the type operation being conducted.

SUCCESSFUL control of an exercise depends in large measure upon the adequacy and reliability of the communication system pro-

vided for the umpires and Director Headquarters. In large exercises, an extensive separate communication network is required. This system usually parallels the tactical networks and often incorporates special features not found in normal tactical systems—*e.g.*, voice radio communications may be integrated into the telephone system from vehicular radio equipment.

Because success depends so heavily upon proper functioning of the communication system, the staff organization of the Exercise Director Headquarters may place special emphasis on the communication staff function. In Exercise King Cole, for example, the signal section of the Director Headquarters functioned at general staff level.

Liaison is maintained with overseas commands for exchange of ideas and concepts. Frequently an organization, technique, or procedure will be evaluated in Europe, the Far East or perhaps in the Caribbean or Alaska as part of a field exercise. Information gained in these areas contributes materially to the objectives considered for inclusion in continental United States exercises.

Meanwhile, frequent revisions may be made in the exercise and maneuver programs due to changing troop requirements all over the globe. Annual budget ceilings also may cause frequent changes in troop participation and size of an exercise.

But always, amid ever changing conditions, the goal of exercise and maneuver planning remains uppermost—the development of flexible, hard-hitting combat units that can successfully meet the test on any battlefield of the future.

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## **Exercise King Cole**

# **Testing Ground for Pentomic Concept**

**J**UST as a scientist tests his hypotheses in laboratories or by other means compares the known with the theoretical, so a modern Army utilizes maneuvers to put proposed concepts and doctrinal theory to the test.

Exercise King Cole, held in the Louisiana Manöver Area last spring, was both a command post and a field training exercise designed to provide training for commanders and staffs in tactical, intelligence and logistical operations under assumed conditions of extensive atomic, chemical-biological-radiological, and electronic warfare capabilities. It also was designed to develop further the pentomic concept of organization, doctrine and techniques as they relate to future operations.

Some 20,000 troops, including men from the 1st Armored, 1st and 3d Infantry and 82d and 101st Airborne Divisions, went through four specific tests—TACTICAL SUPPORT CENTER to determine the best organization, equipment and procedures for full-time control and coordination of all field army tactical support means; INTELLIGENCE DOCTRINE based on results of the previous Exercise Sage Brush; SPECIAL DEMOLITIONS; and a new concept for ORDNANCE GUIDED MISSILE AND SPECIAL WEAPONS SUPPLY.

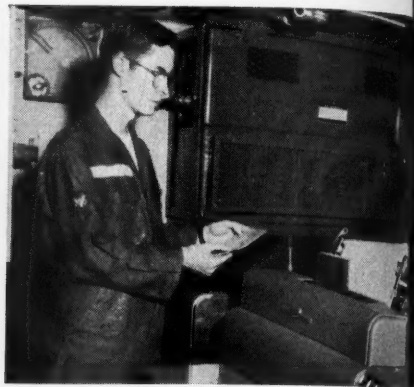
King Cole involved the newest in weaponry and in tactical doctrine concepts, superimposed on the traditional requirements of supply and support. As the following pictorial record indicates, conventional supply, support and tactical activities characteristic of any maneuver had to be tailored to fit new formations and concepts.

Of long-range significance to the Army, along with the introduction of new weapons, equipment and techniques, were the extensive communications facilities employed, including the vehicle-mounted Tactical Support Centers designed to give commanders instant control over tactical support elements under dispersed conditions of nuclear warfare.

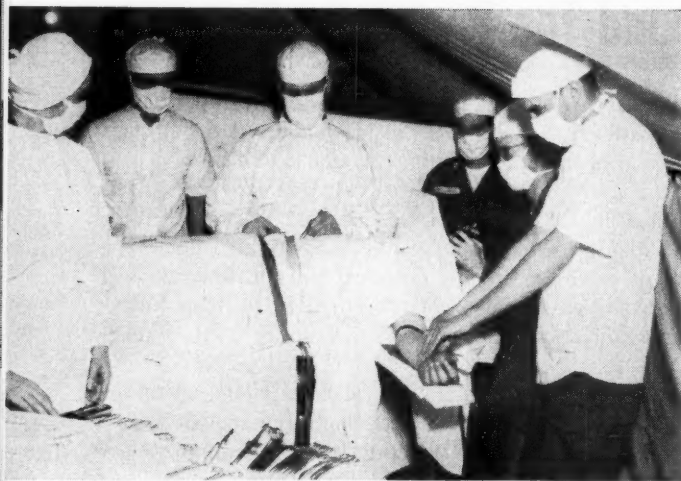


**Isolated units receive mail  
by helicopter . . .**

**KING COLE called day  
facilities to maintain pop**

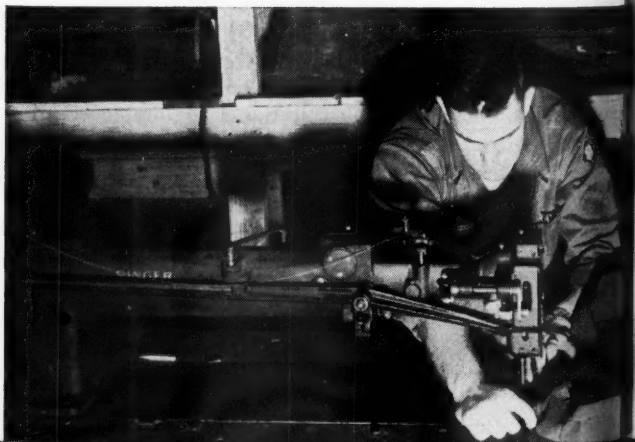


**Accounting machines print  
rosters . . .**



**Surgical teams  
operate in field  
hospitals . . .**

**Equipment is re-  
paired on the  
spot . . .**

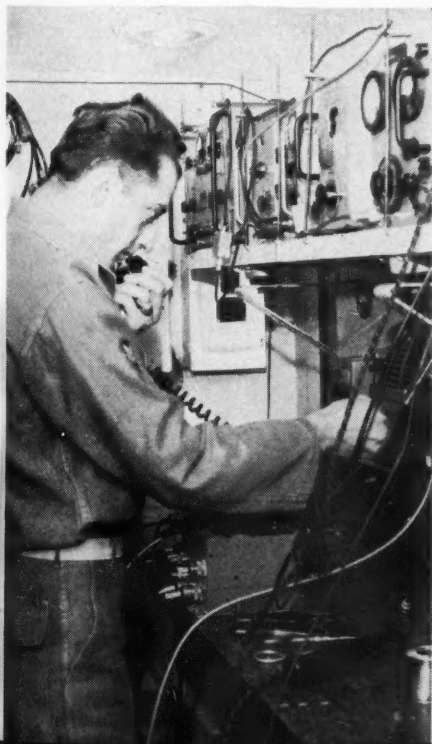


ed by a wide array of support and supply  
ain troops in the field—

Automotive  
equipment is  
kept rolling . . .



Aircraft radios are kept  
functioning . . .



Latest spiral-4 cable  
is installed.





**EQUIPMENT AND WEAPONS** ranged from the conventional to . . .



**Prime mover M-8E-2 is used to deliver 8-inch howitzer . . .**

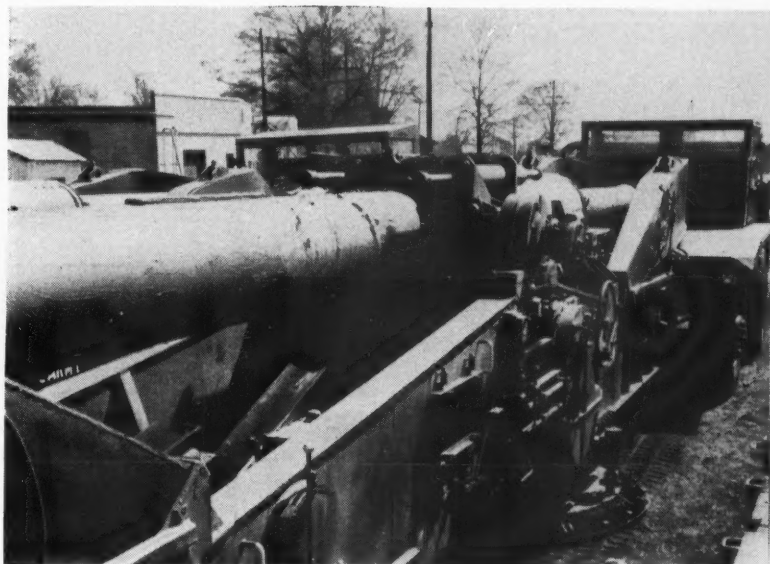
**which is served by alert cannoneers . . .**



**while machine gun crew protects gun emplacement.**



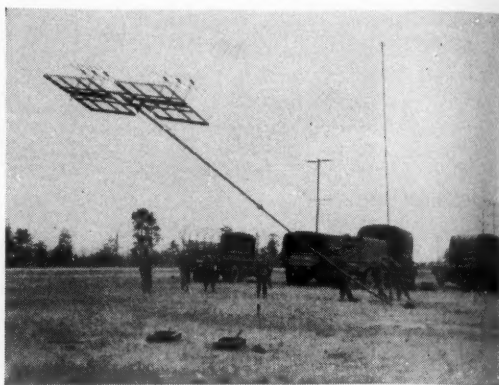
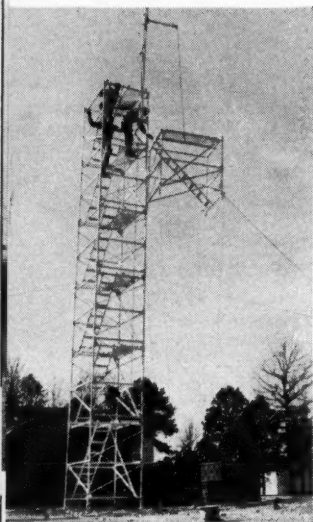
... the huge 280mm atomic cannon  
and the 267mm Honest John.



*The 280mm gun is prepared for swift movement.  
Honest John missile and launcher deploy for action.*



**ELECTRONIC EQUIPMENT** followed troops in the field, transmitted intelligence to Tactical Support Centers . . .



**Radar antennae are erected (above) while (left) microwave towers go up swiftly . . .**

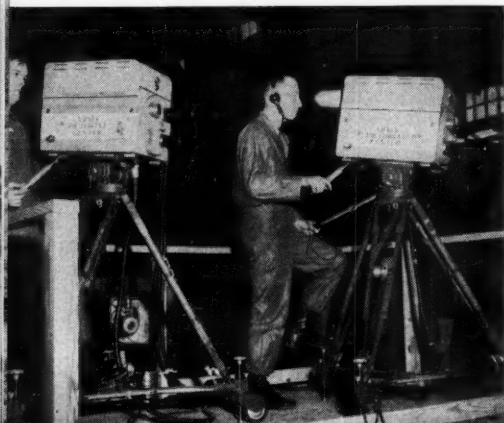
**Spiral-4 cable is tested in field . . .**



**VHF controls are installed . . .**



**Television cameras are mounted . . .**



**and transmit on closed circuits.**



... where target priorities for atomic fires were calculated, relayed to commanders directing troop movements.



**Electronic Warfare Van houses one of TSC's sections.**

**Television signals are relayed to the field.**



**Communications Control Center houses carrier equipment . . .**



**which receives messages from teletypewriter vans and microwave transmitters.**



**EXERCISE KING COLE tested the newly developed Tactical Support Center—designed to enable the commander to weld mobile forces support into coordinated, power-packed teams.**

**Canadian and American men, machines and materiel undergo rigorous cold-weather testing at Fort Churchill—**



## **FAR NORTHERN RESEARCH OUTPOST**

**Lieutenant Colonel  
John T. Lorenz**

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*LIEUTENANT COLONEL JOHN T. LORENZ, Infantry, is Commanding Officer, U. S. Army First Arctic Test Center, Fort Churchill, Canada.*

**D**EEP in the transition zone between the sub-Arctic forest and the tundra, high up on Hudson's Bay, is an important link in the U. S. Army's chain of research and development stations. Here—at Fort Churchill, Manitoba—scientists of both the United States and Canadian armed services conduct

exhaustive cold weather tests. Here standard items of machinery, materiel and fighting equipment, along with military personnel of both countries, are exposed to the most severe weather conditions on the Western Hemisphere.

Supporting the various research teams sent out by the technical branches of the Armed Forces is the U. S. Army First Arctic Test Center (FATC). A field installation of the U. S. Continental Army Command, FATC is under the immediate jurisdiction of the Military District of Washington. Besides exercising command over all United States military personnel, FATC has responsibility for all U. S. Federal employees at the post. Its mission—to provide administrative and logistical assistance to U. S. scientific groups engaged in Arctic experiments.

Currently, Fort Churchill and FATC are participating in the giant scientific exploration project of the International Geophysical Year. In spring of 1956, FATC was designated to support a major part of the IGY Rocketry Program. Launching facilities were built for the Aerobee-Hi and Cajun rockets, with their attendant telemetry and communications installations scattered over 200 square miles of Arctic tundra. Today this Aerobee-Hi launching site is the only known enclosed rocket launcher in the world.

While Fort Churchill is a Canadian Joint Services Station administered by the Canadian Army, it offers facilities for the Armed Forces of both nations. Cooperation between the Canadian and U. S. Army commanders is extremely close. Canadian and Amer-

ican soldiers and technicians work side by side developing new methods and techniques to combat the bitter cold. In addition, various civilian agencies of both countries utilize the facilities here which often form a "jumping off place" for scientific work in the eastern Arctic.

LOCATED five miles from Manitoba's northernmost seaport, Fort Churchill is situated on the upper western shore of Hudson's Bay on an outcropping of rock overlooking blue waters of the bay in summer and pack ice in the winter. Originally established by the U. S. Army during World War II, the installation was turned over to the Canadian government in 1946 and has since been operated as a Canadian Joint Services Station.

Although vegetation is sparse, the area is dotted with innumerable lakes and streams and abounds with wild life. Fox, mink, ermine and beaver are often trapped near the post and wolf packs are frequent prowlers in the area. Polar bears are not uncommon visitors and the Beluga or white whale—a member of the dolphin family ranging to 16 feet and weighing close to 1600 pounds—is abundant in the bay during the summer.

Because of its location on the barren tundra, Fort Churchill is exposed to a savage cold found in few other places on the globe. During the long winter months, winds whip down over the vast expanse of the northern plain, combining with the consistently below-zero temperatures to produce the feared and treacherous weather condition known as "windchill."

Although average mid-winter temperatures range between 11



and 19 degrees below zero, the mercury often dips to 40 and more below. Weather experts state that, due to windchill, Fort Churchill is one-third colder than the North Pole where temperatures are lower but the atmosphere is calm.

Windchill lowers temperatures of materials and humans at an extremely rapid rate. Tough metals sometimes shatter into brittle fragments, rubber tires harden like steel, lubricants lose vitality, plastics crack like glass, weapons malfunction, and projectiles develop idiosyncrasies in flight. Uncovered human flesh can be frozen solid almost instantly when exposed to extreme windchill.

Despite these sometimes awesome conditions, commonsense precautions keep cold-weather casualties and damage to a minimum and life continues normally throughout the frigid months. Vehicles leaving camp must file route plans and remain in constant radio contact with the base. Personnel wear

specially designed environmental clothing as a routine matter, and all groups leaving the post are required to have at least one Arctic weather veteran along.

FATC maintains a vast variety of equipment to meet all operational requirements. The versatile and highly effective M-76 amphibious oversnow vehicle is used for year-around operation on the tundra. Army Aviation helicopters are employed for reconnaissance, rocket recovery and rescue missions. Railway maintenance cars speed personnel to outlying installations along the Canadian National Railway right-of-way. Complete Signal, Ordnance and Engineer Field Maintenance Shops service units and equipment in the field.

PROTECTION of men and materiel against the powerful forces of Nature presents a constant challenge to Canadian and American technicians. Their goal is to develop standard vehicles, weapons

*Buildings constructed in 1942 (foreground) contrast with new units in this aerial view of Fort Churchill.*







*Fort Churchill was established in 1688 as a trading post, these soldiers learn from a Royal Canadian Mounted Policeman.*

and equipment capable of withstanding extreme cold as well as extreme heat. Often items tested at Fort Churchill during the winter turn up the following summer under the blistering Arizona sun.

For example, last winter the Quartermaster Research and Engineering Center at Natick, Massachusetts, in cooperation with the Quartermaster Field Evaluation Agency of Fort Lee, Virginia, had a testing team at Fort Churchill—a group consisting of three officers, seventy enlisted men, and nine civilian scientists.

Their research included study of the "partitioned insulation requirements of cold weather clothing," evaluation of a Sealdbin container for storage of combat and aviation gasoline in all types of climates; and evaluation of "chemically modified chicken feathers as substitute for standard 40/60 water fowl down and feathers" for sleeping bags. Highly technical in nature, these tests are of great importance in the development of new and

better equipment—the ultimate goal of any research team.

In addition, cold weather studies have been conducted by Ordnance, Medical, Chemical, Signal and other branches of the Army. Between 1947 and 1955 various teams from the Army's sister services also undertook experiments there.

WITHOUT doubt, service at this outpost in northern Canada is bleak, isolated and rugged. The town of Churchill, five miles away, is a prototypical frontier community. Originally settled in 1688 by a group of men from the Hudson's Bay Company who opened a trading post at the mouth of the Churchill River, the settlement today has a population of 1,500, one-third being Indians.

Besides the whaling industry, Churchill is a busy port during the four ice-free summer months, with ships taking on grain from a giant five-million-bushel elevator.

The village is also the end of the line for the Canadian National

Railway. By train, Winnipeg is almost one thousand miles away. No highways exist between Churchill and the outside world.

DESPITE its almost complete isolation, the Center has a radio station (CHFC) operated by Headquarters, Fort Churchill, which provides its listeners with the best in radio entertainment. U. S. Army personnel aid in the station's programming, and the Radio-TV Division of the Office of the Chief of Information, Military District of Washington, supplies two taped radio shows each week along with special feature programs from time to time.

A small bimonthly newspaper, known as *The First Arctic Test Center Times*, is made up at Fort Churchill, shipped to Winnipeg for printing and returned. It is probably the only paper of its kind traveling 1000 miles for printing and another 1000 for delivery.

The short summer months bring relief from winter extremes. Then the average temperature reaches about 60°F., with the mercury occasionally rising to 80. The heat, however, brings giant flies and monster mosquitoes. As one veteran observed: "Those mosquitoes don't bite you—they butt you."

For the outdoorsman, the area is a hunting and fishing paradise. Geese, duck and ptarmigan are here by the thousands, and caribou is good game when in season. Fishing is considered to be the best in North America. Trout, pike and Arctic greyling swarm throughout the untouched lakes, pools and streams which dot the area.

The Canadian government has spared no expense in making liv-

ing conditions as comfortable as possible. Soldiers below the grade of sergeant are quartered in spacious six-man squad rooms featuring dressers and asphalt tiled floors, and deep armchairs. First three graders have private rooms. BOQs are comfortable two-room suites.

A limited number of apartment-type quarters are provided for married personnel. These generally consist of a large living room, master bedroom, two small bedrooms, bath, kitchen and laundry. Accommodations are complete and tastefully furnished.

Canadian officer and NCO open messes are available to eligibles of both nations. The Canadian Army Garrison Store (counterpart of the Army Post Exchange) and commissary is open to American personnel. Excellent library, game-room, and snackbar facilities are maintained. The post theater features the latest films, and the bill changes daily.

There is an excellent Province of Manitoba school—with classes conducted through grade 12—attended by both American and Canadian children.

An extensive off-duty recreational program is conducted jointly by the two countries. Leagues are formed for softball, volleyball, basketball, curling (shuffleboard on ice) and hockey—Canada's national sport. A complete craft shop is jointly operated for those who have interests in photography, ceramics, leathercraft, electronics or any other constructive craft. Fishing and hunting equipment is also available for issue.

AS THE long winter months move slowly toward spring, person-

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Colonel D. G. Ketcheson, Commander, Canadian Joint Services Station, greets Maj. Gen. John G. Van Houten, Commanding General, Military District of Washington (left).



nel of both Canada and the United States work and play side by side. The highly important and significant research studies and experiments continue in all weather, month after month, producing scientific data which finds practical application by the Armed Forces

of the United States and Canada.

Harmony between the two countries is complete. In fact, many Americans at Fort Churchill find it difficult to remember that they are serving on foreign soil—an unspoken tribute to the hospitality of their Canadian hosts.

## New Frontiers in Northern Research

EXPLORATION of the weather at altitudes up to 60 miles has been carried out by physicists of the Signal Engineering Laboratories, Fort Monmouth, New Jersey. Army scientists have made readings in a series of five summer rocket firings in connection with the International Geophysical Year, using Aerobee rockets fired at Fort Churchill, Canada.

The Aerobees were loaded with 19 high-explosive grenades, which were ejected at pre-timed altitudes.

Readings now are being analyzed, and data will be made available to scientists of the more than forty nations participating in IGY. The information is expected to prove of vital interest to weather researchers everywhere. First data indicate that winds of 300 miles an hour or faster, and temperatures of 100 degrees below zero Fahrenheit, are not uncommon.

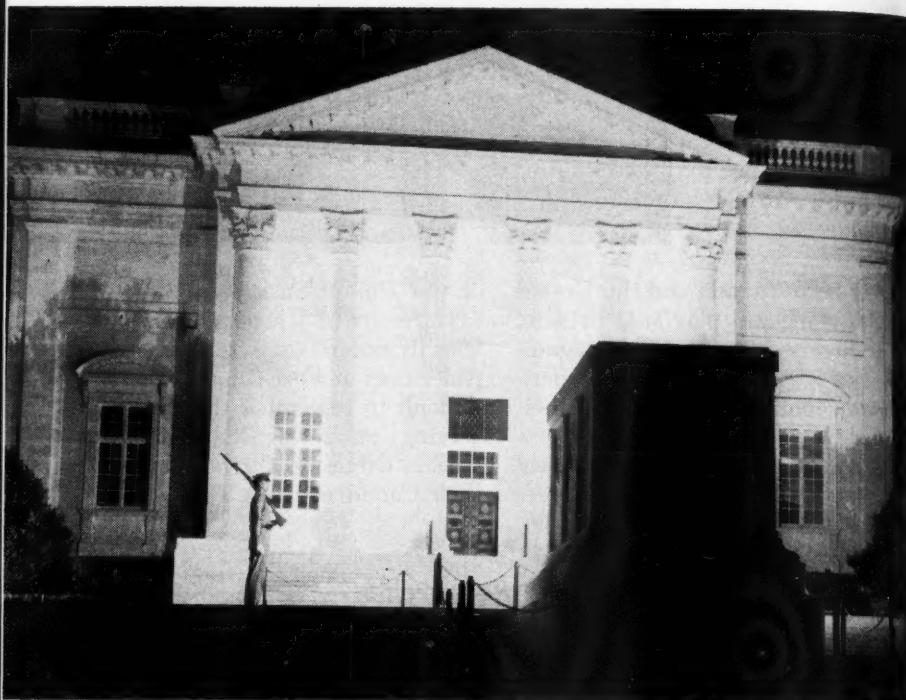
Further tests have already been completed at White Sands, New Mexico, and next year soundings will be made from Guam in the West Pacific. Still another series of winter tests have been set for Fort Churchill to provide comparative data.

LIKE fine wine, gasoline tends to improve through storage—at least, aviation gasoline has been found to improve when stored in pits carved out of ice in the huge tunnel which the Corps of Engineers has driven some quarter of a mile into the Arctic Icecap.

Under normal climatic conditions the fuel evaporates rapidly and takes on impurities, but it can be stored indefinitely in the cold of the pits, according to scientists of the Snow, Ice and Permafrost Research Establishment, Wilmette, Illinois. In fact, aging in the cold improves the gasoline. After several months of storage, it was noted that there was no appreciable loss due to evaporation; also, the fuel contained less moisture.

The huge tunnel is being cut to determine its feasibility for military purposes. Results of studies thus far indicate that under-the-ice installations can be used for storage, fuel dumps, air raid shelters and even living quarters. Temperatures remain almost constant at about 15 degrees Fahrenheit, which is the mean annual temperature of the region.

# Unknowns of World War II and Korea Interred at Arlington Cemetery



**W**ITH impressive ceremonies, two Unknowns of World War II and Korea will be interred on Memorial Day in Arlington National Cemetery alongside the Unknown Soldier of World War I, all three to rest there in continued and unending honor rendered by the entire Nation.

Parades by troops and color guards will mark the Memorial Day ceremonies which will be attended by Government officials, the Congress and military leaders.

Overall plans for the return, state funeral and interment are being coordinated by the Quartermaster General of the Army, acting for the Chief of Staff of the Army. The Quartermaster General has been assisted by an Advisory Committee composed of representatives of the military services,

the Commission of Fine Arts, and the various veterans organizations.

SELECTION of the two Unknowns will be made at simple ceremonies to be held outside the continental United States. The Unknown of World War II is to be selected from two Candidate Unknowns, one representing the trans-Atlantic, the other the trans-Pacific phase.

At Epinal American Cemetery and Memorial in France, selection of the trans-Atlantic representative will be made about 12 May. A Medal of Honor enlisted man will make the selection from among 13 unidentified Americans who lost their lives in North Africa and Europe. This Candidate Unknown will be transported by an Air Force plane to the U. S. Naval

multiplied by thousands of improvements being made Army-wide, they add up to an impressive total.

Effectiveness and efficiency—the two keys to a balanced military program—are being achieved in large measure through the Army's Management Improvement Program. This program is a many-sided effort to seek out and put into practical use ideas initiated at the grass roots. It points out how each military and civilian worker in the Army can do a better job without waste of effort, material and money.

The program, aggressively carried out by Army leaders at all levels, seeks to stimulate ideas and recognize worthwhile suggestions by putting them to practical use and realizing their full potential through widespread dissemination. In brief, it is a program of exchanging new ideas and translating them into action.

In focus at all times is one primary objective—to increase the combat effectiveness of the Army.

RECENT utterances by our Nation's leaders stress the fact that the winner of the present technological race will be the one who makes best use of the resources at his disposal. This includes the best use of manpower, material and money. If our Nation were in a short sprint, all of its resources would be available in maximum quantities. But we are in a race that stretches far beyond the horizon. This is why it is imperative that a steady pace be set for the long pull. We must be ready for today, tomorrow and the day after.

The Army Management Im-

provement Program, in operation with increasing success since 1949, has already put into action thousands of new ideas. These have reduced costs, speeded up production, saved manpower, simplified procedures, improved organizational structures and produced better products.

The program has brought changes in small items as well as in comprehensive ones, ranging in value from a few cents to millions of dollars. In the face of the tightening pinch of ever-increasing costs, the program is proving an important and vital investment. Many intangible benefits accrue.

Under the program, the birth of ideas by workers for improving their own job performance and that of their organizations is not left to chance. Under provisions of a Presidential Executive Order, an Act of Congress and Army Regulations, commanders are required to show that they are aggressively promoting management improvement programs; they are directed to plan specific projects and goals and report on the results.

The Army provides incentives and specific means to help all workers participate. This grass roots endeavor consists of two main elements—the Work Simplification

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*"The Army Management Improvement Program . . . has already put into action thousands of new ideas. These have reduced costs, speeded up production, saved manpower, simplified procedures, improved organizational structures and produced better products."*

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AT New Orleans Port of Embarkation, an improved method of nesting two-wheel cargo trailers for overseas shipment markedly reduced the cubic footage of shipping space required, resulting in an estimated annual savings of \$38,261.

and the Army Incentive Awards Programs.

Under the Work Simplification phase, every supervisor and individual is encouraged to find easier and better ways of doing his job. The Incentive Awards Program recognizes publicly and concretely those individuals, groups and organizations which make noteworthy contributions. Through this two-pronged approach, an attempt is made to imbue each civilian and military Army member with the conviction that he has a responsibility to develop improvements in his own work and output, regardless of the nature of his job.

**IMPROVEMENTS** don't just happen. They must be thought out, experimented with, and perfected.

Success in this kind of endeavor requires a temperament that abhors waste, an inquiring, questioning mind, and a planned, organized and systematic approach to finding a better way to get the job done, no matter what the size.

Managerial specialists have noted that there are three types of people—the few that make things happen; the many that watch things happen; and a vast majority that have no idea what has happened. The Army Management improvement program is run by individuals who make things happen. Theirs is

a story of accomplishment in four fields—better systems, programs, activities, and improved support from the operating level.

### WORK SIMPLIFICATION

THE Army has developed special techniques to help each individual analyze his own work methods in the search for improvements. One important phase of this is the training of supervisors in methods of analyzing and simplifying work.

During the fiscal year ending 30 June 1957, a total of 11,951 supervisors received training in work simplification. This resulted in \$9,031,203 benefits to the Army—a savings representing 18.8 times the training costs. Each eligible work simplification improvement is sent to a local incentive awards committee for consideration and appropriate recognition of the employee who devised it.

### INCENTIVE AWARDS PROGRAM

**BOTH** military and civilian personnel are encouraged to make suggestions for management improvements. Many of these suggestions grow out of the ingenuity and imagination of employees, and are quite apart from those which result from work simplification.

Again, during the fiscal year ending 30 June 1957, more than 19,000 employee suggestions designed to improve management practices were adopted by the Army, representing an economy of more than 17 million dollars.

### COMMAND PLANNING

THE management improvement effort is not developed or carried out as a distinctly separate activity outside the normal mission of a

command. Instead, it is woven into the daily life of the command, as part of its normal operations, and receives guidance and impetus at all command levels. A continuing cycle of ideas and action flows from the worker level, through the field commands to Headquarters. Department of the Army, and back again.

Army Regulations 1-60, "Management Improvement in the Army Establishment", outlines the purpose of the program, gives definitions and places responsibilities. Among other things, it states that each command will develop a management improvement plan. Department of the Army Pamphlet 20-344, "Management Improvement in the Army," further explains how the Army management improvement program functions.

THE over-all Army management improvement plan is a consolidation of all of the individual plans drawn up by Army agencies throughout the world. At each installation and activity, an appropriate management improvement plan must be developed, tested and installed. First, objectives must be selected showing the broad areas for improvement. These objectives are broken down into projects, and the projects themselves are further broken down into scheduled actions. There must also be a constant revitalizing of the program and a periodic evaluation of the effectiveness of the effort.

In preparing the management improvement plan, it is necessary to determine what activities are in need of improvements. Generally, seven different sources provide this information:

- (1) Directives from higher headquarters.
- (2) Desires of the commander
- (3) Recommendations of subordinate commanders and staff officers.
- (4) Specific improvements needed, as indicated by a quarterly review and analysis of the major activities of the operating programs.
- (5) Results of inspections.
- (6) Examples of improvements made elsewhere and taken from management improvement reports and other sources.
- (7) List of projects the commander desires his staff and operating elements to undertake.

EACH non-tactical command, agency and installation of the Army is required to draw up its own management improvement plan. Heads of Department of the Army staff agencies and all other supervisory personnel have the responsibility for identifying and effecting improvements in activities under their jurisdiction.

This endeavor can be facilitated by application of management

MORE THAN 135,000 pieces of incoming correspondence are received monthly by the Personnel Records Branch, The Adjutant General's Office, Department of the Army. Hand stamping the date and time of receipt on each item required 3,840 manhours per year. Installation of an electric perforator that can perforate 20 sheets of paper in one operation eliminated 81 percent or 3,120 manhours of effort during the year.

A NURSES Audio-Visual Call System has been installed at the Army Hospital at Camp Hanford, Washington, allowing nursing personnel and patients to call each other by a system of lights and converse by means of an intercommunication system. As a result, more time is available for nursing duties and the morale of both patient and nurse has been substantially improved.

engineering techniques as taught to supervisors in the Work Simplification Program and by the utilization of such Army management aids as Performance Analysis; Personnel Management Activities; Administrative Inspections; Incentive Awards; Statistical Analysis; Budget Analysis; Manpower Surveys; Organizational Analysis; Reports Control System; Forms Control System; Procedures and Methods Analysis; and various campaigns for Conservation, Safety Consciousness, and Cost Consciousness. These various techniques are disseminated through Department of the Army Regulations, Pamphlets, and Circulars.

THE PLAN includes specific needed improvements as shown by studies and inspections, examples of improvements made elsewhere, and projects which the commander directs be undertaken. Specific projects are listed for each fiscal year, along with schedules for starting and completing each project. Responsible individuals are designated to supervise or carry out each project.

The command directive may be broad or specific. It may include such projects as elimination of unnecessary housing and facilities, reduction of paper work, more efficient use of certain equipment, better methods of inspection, less expensive supply procedures.

The management improvement program has its greatest applicability to the non-tactical activities of the Army. Many improvements, however, relate to tactical operations, and substantial benefits have been reported by commanders of combat forces.

EACH echelon of command reviews, analyzes and reports to the next higher echelon the over-all ac-

*Time and effort involved in collating pamphlet materials (below) . . .*



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complishments of its program. Also, each major Army field command, major service and agency is required to inform Headquarters, Department of the Army of its most outstanding improvements.

Each quarter, all commands within the Army are required to forward to the Department of the Army selected examples of improvements, documented and showing measurable and intangible benefits. The examples are indexed and analyzed. Scheduled actions are followed up to make sure that results are achieved.

The Department of the Army receives between 250 and 300 such examples each quarter, amounting to millions of dollars in benefits to the Army. During the fourth quarter of Fiscal Year 1957, for example, there were 297 examples of improvements reported, amounting to \$14,315,489 in benefits. And these were merely a sampling of the improvements in the Army.

For the fiscal year which ended 30 June 1957, a total of 1050 selected examples of management improvements were reported, amounting to many millions of dollars.



*Time required to wash pipettes was reduced by a multiple stopper that permits cleaning five at once.*

### AN ACTUAL PLAN

AS A case study of an actual plan in operation, consider the Chief of Engineers plan which shows that 1626 improvement projects are planned for Fiscal Year 1958. The Chief of Engineers developed this plan by drawing up a listing of Management Improvement Objectives. These over-all objectives are fanned out to all Engineer agencies, who in turn break the objectives down into individual projects, which in turn are broken down into detailed scheduled actions.

... was halved when turntable method was installed.



### FLOWBACK

EACH quarter, case reports of improvements of general interest and broad applicability are sent by Headquarters, Department of the Army, to all commands. Thus improvements made in one area can be adopted in other areas and their benefits multiplied.

Many headquarters have created ingenious methods of circulating examples of improvements throughout their commands, such as staff form letters, check lists, circulars, pamphlets, and many other approaches to keep original ideas alive and active.

This grass roots use of installed improvements is only the beginning. Headquarters, Department of the Army utilizes them in many other ways:

- Selected examples of improvements are issued from time to time in the regular Department of the Army monthly management improvement packet. This packet is distributed throughout the Army as a regular Adjutant General Letter on a monthly basis.

- In addition, selected examples of improvements are sent direct to appropriate staff agencies by form letter for consideration and use in furnishing guidance in the field and in formulating basic Army policy. In this way selected improvements can receive individual attention and special staff action to disseminate

more widely the improvements that were generated elsewhere.

- Results of the management improvement program are used at budget hearings to illustrate the Army's efficient use of its resources of men, money, and materials.

- Approximately 50 examples that have wide applicability are selected each quarter for distribution to all commands. All commands are requested to review and consider using the innovations if they are not already applying them.

- Action is also taken to publicize examples of improvements in various service journals, technical and engineering publications, as well as in magazines in the managerial and administrative fields.

### IDEAS PAY OFF

AN example of how an improved method of doing the job may be disseminated Army-wide is found in the post, camp and station "super market" method for issuance of expendable supplies. Under this system, each unit selects its own supplies from the shelves and checks them out as in a modern self-service store. The system was tested at Fort Lee, Virginia, and Fort Lewis, Washington, during 1956 and is now being used at 51 Army installations where the volume of supply warrants it. It has proved to be a much quicker, more efficient and economical method

ATTACHMENT of a wooden two-step ladder to the end of stock carts used at the The Adjutant General's School, Fort Benjamin Harrison, Indiana, enables supply personnel to reach publications on the highest shelf without picking up and carrying a ladder. Result: More efficient utilization of equipment with added safety.



which reduces paper work and warehouse personnel.

- At Headquarters, First United States Army, the time for processing enlistees in the Army Reserve, which formerly took two to five days, was reduced to one day by centralizing equipment processing from several widely separated buildings into one building.

- The Detroit Ordnance District realized an annual benefit of more than \$500,000 in transportation costs through improved coordination of shipping orders for vehicles.

- During 1956, elimination of the Alaska General Depot as a storage and re-supply point for many items of supply wiped out a bottleneck of unnecessary rehandling, documentation and reshipment. By sending supplies from the Quartermaster Market Center direct to all Army and Air Force commissaries in the command, stock funds and personnel were better utilized.

- At some Army installations, investigations revealed improper rate schedules for commercial utilities services. Resulting adjustments reduced the costs many thousands of dollars.

- At Fort Benjamin Harrison, Indiana, experienced instructors leaving for other duty did not have time to orient their replacements. As a consequence, instructors spent considerable time adjusting to lesson plans. This difficulty was

solved by having the experienced instructors record their experience on magnetic tapes.

- At Fort Dix, New Jersey, the taking of identification pictures with a Polaroid camera was improved in two ways. The camera normally produced two identical prints of each individual photographed. A study of the camera revealed that two men could be photographed at once in exactly the same time it had taken to photograph one man. Moreover, only one print of each person was produced. Elimination of the double print meant a 50 percent cut in the cost of film and operating time.

ARMY workers have exchanged thousands of other ideas for cutting paper work, making the handling of supplies simpler, and reducing waste.

Workers have come up with such ideas as a better way to open boxes, a less expensive method of filling 105mm smoke canisters, an improved system for disposing of ashes from boiler plants, a more satisfactory way of applying paint remover to furniture.

Many are in the simple category that evoke the reaction "Why didn't I think of that!" For instance, an expense of over \$16,000 a year was avoided by one Army installation by using only old, salvage lumber in the construction of

DEVELOPMENT of an improved internal coating for Army 5-gallon gasoline cans has been accomplished by technologists of Quartermaster Research and Development Command, Natick, Massachusetts. A coating based on epoxy-phenolic resin not only prolongs the average life of the gasoline can by an estimated fifty percent, but does not affect the contents. Estimated savings per million cans: \$75,000.

shipping crates. Simple! But new lumber had been used previously until somebody had the idea to do the job better and cheaper.

THE savings and benefits resulting from the Management Improvement Program have been of major assistance in enabling the Army to carry out its assigned missions in recent years. Increased operating costs, together with lower budgetary limitations, have made it mandatory for commanders to improve the efficiency of their operations. Under the Management Improvement Program,

the Army is making a determined effort to realize this goal in the most economical and effective way possible.

As Lieutenant General William S. Lawton, Comptroller of the Army, recently stated, "The Army Management Improvement Program is a definite, live program for improvement of management, for the saving of dollars and for the more effective utilization of people throughout the Army." It is indeed a dynamic program that shows results in tangible form and returns many times over the investment made in it.

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### CIVILIAN COLLEGE SCHOOLING AVAILABLE TO ARMY ENLISTED PERSONNEL

DESIGNED to create a hard core of highly trained career specialists and non-commissioned officers, the U. S. Army has expanded its program of schooling at U. S. colleges and universities to provide up to four years college-level training at Government expense to qualified enlisted personnel in technical, scientific and managerial fields.

The training will be made available in one- and two-year increments. Those accepted for one year will be required to reenlist for a three-year period; those receiving two years of instruction must reenlist for six years. A third and fourth year of training toward a degree may be applied for within six months prior to completion of a current enlistment.

To be eligible, military personnel must be on active duty as enlistees, inductees or Reserve Forces Act personnel; they must have completed one year of a two-year training obligation at time of application, and be able to complete academic training before attaining age 35. Applicants may indicate first and second choices of areas of training and schools in various fields of specialization.

Fields of specialization may vary, based on military requirements, but may include such subjects as business administration, bacteriology, cinematography, engineering, criminology, journalism, and political science.

APPLICANTS must have graduated from an accredited high school or equivalent; those with a General Education Development diploma or certificate, or graduates of nonaccredited high schools, may be accepted subject to passing the entrance examination of the college or university to which admittance is being sought. In addition, applicants must achieve certain minimum scores in the Army classification battery of tests.

For the college period starting this fall, applications are being accepted up to 1 May. Applicants will be selected on a best qualified basis.



*Members of the 35th AAA Brigade man the tracking consoles which monitor early warning information received by Missile Master system.*

## Army Missile Master Now Operational

**M**ISSILE MASTER, the first fully operational electronic air defense control system in the United States, is now helping defend the Washington-Baltimore government-industry complex against air attack.

Placed in operation in December by the Army Air Defense Command at Fort George G. Meade, Maryland, the Missile Master electronically controls and coordinates the fire of the Army's air defense weapons to insure maximum effectiveness. Targets can be selected economically, with control of each Nike missile being retained by local battery commanders. In this way, preselected targets in an attacking air fleet are assigned for destruction by Missile Master to individual batteries of a Nike network.

**BEFORE** the advent of Missile Master, antiaircraft batteries were controlled and coordinated by voice telephone from a central defense command post where targets were plotted manually on a map. Increased speed of aircraft and the high accuracy of the Nike missile necessitated the development of a rapid, automatic, elec-

tronic system for transmission and coordination of information.

Missile Master relays a tactical decision of a weapons battery commander or the defense commander to all other commanders in the area as soon as it is made. It also electronically stores all information on targets in the area and presents it on a TV-like picture tube in a simplified form.

Although Missile Master operates independently, it also has the capability of coordinating the fire of Nike batteries in cooperation with the U. S. Air Force SAGE interceptor aircraft control system in the overall defense of the continental United States.

The Missile Master system was developed by the U. S. Army Signal Engineering Laboratories at Fort Monmouth, New Jersey, in conjunction with the Martin Company of Orlando, Florida.

The first Missile Master installation is operated by the 35th Antiaircraft Artillery Brigade. Additional systems will be established for the New York City defense area and other strategic, industrial and population centers across the nation.



*MAAG-Japan performs a vital role in the Far East by*

## **AIDING JAPAN'S SELF DEFENSE FORCES**

**Brigadier General James H. Cash**

**O**F THE more than fifty Military Assistance Advisory Groups and Military Missions which the United States has in operation throughout the world, perhaps none has a more diversified background than MAAG-Japan. Further,

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**BRIGADIER GENERAL JAMES H. CASH, USA, is Chief, Army Section, Military Assistance Advisory Group, Japan.**

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MAAG-Japan is unique in that it is performing its mission in a country which by its national constitution renounces war as a sovereign right.\*

In 1950, during the final days of the Allied occupation of Japan, General Douglas A. MacArthur, then Supreme Commander for the Allied Powers, recognizing the danger to Japan of the steady encroachment of international Communism in the Far East, recommended to the Japanese government the formation of a Japanese National Police Reserve. This recommendation was accepted and in August 1950 the Japan National Police Reserve was established with a strength of 75,000 men. Its mission—"to maintain domestic peace and order."

At the same time, General MacArthur directed the transfer of Civil Affairs Section, Eighth Army, Japan to GHQ, SCAP, with the mission of aiding and advising the Japanese in the training and equipping of the National Police Reserve. In effect, the present Military Assistance Advisory Group-Japan had its origin in that Civil Affairs Section, GHQ, SCAP.

DEVELOPMENT of today's compact tri-service MAAG-Japan was accomplished smoothly amid domestic changes brought about by ratification of the Japanese

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*"... Growing awareness to the possibility of aggression both within and without Japan, and a natural desire to assume a greater and ever increasing share in their own defense, finally brought about the realization that Japan must have its own military force capable of defending the country."*

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Peace Treaty and Japan's increasing awareness of the Communist menace in the Far Eastern area.

The Japan National Police Reserve continued to function as such until August 1952. During that period it was the mission of the Civil Affairs Section (redesignated Safety Advisory Section-Japan in November 1952) to assist in training this force. The Police Reserve was an all-volunteer group, led by a few select former Japanese Army officers recruited in a civilian capacity. Arms and equipment were provided by the United States, and training in their use was conducted by members of the U. S. Safety Advisory Section-Japan.

In August 1953, the Japanese Government, taking its first independent action for its own national defense, established the National Safety Agency. The National Police Reserve was redesignated the National Safety Force with a new authorized strength of 110,000 men. The Maritime Safety Force (established 26 April 1952) was redesignated the Coastal Safety Force with a strength of 7,500. The two new forces were given duties on land and sea "to maintain peace and order in our country and to act

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\* Article 9 of the Japanese Constitution states:

"The Japanese people forever renounce war as a sovereign right of the Nation and the threat or use of force as a means of settling international disputes.

"In order to accomplish the aim of the preceding paragraph, land, sea and air forces, as well as other war potential will never be maintained. The right of belligerency of the State will not be recognized."





*During winter maneuvers, Japanese troops use ski poles to steady rifles. Below, a ski patrol unit trains under U. S. Army advisors.*



*An Airborne Training Unit checks equipment before boarding plane.*



whenever necessary for the protection of lives and property."

Just prior to establishment of the National Safety Force, the Japanese began to receive vast amounts of World War II arms, equipment and materiel from the United States Government. These stocks were already in Japan and offered no serious problem in delivery. However, the transfer did materially increase the aid and assistance task of Safety Advisory Section-Japan.

In January 1953 the Section, redesignated the Safety Advisory Group-Japan, was established as a major command with a strength of more than 700 military and 900 civilian personnel.

The mission of the Group was now extended to include: providing advice and assistance; military equipment and materiel; training of personnel (by direct instruction and arranging for training at U. S. schools); exercising supply control for supplies provided by the United States; coordinating portions of the Offshore Procurement Program; as well as reviewing and making recommendations for aid and assistance to the National Safety Force.

On 8 March 1954, the Governments of the United States and Japan signed a Mutual Defense Assistance Agreement which, among other provisions, outlined the conditions under which U. S. military assistance would be furnished to Japan.

A few months after consummating this Agreement, the Japanese Government, taking cognizance of the Communist threat to Japan itself, reorganized the National Safety Agency with the mission of *defending* the country against direct aggression and maintaining domes-

tic order. Two laws were enacted, establishing a Defense Agency and a Self Defense Force. Under these laws the National Safety Force was redesignated the Maritime Self Defense Force. Concurrently an Air Self Defense Force was established.

In keeping with the provisions of the Mutual Defense Assistance Pact and consonant with the establishment of the Japan Defense Agency and Self Defense Forces, the Safety Advisory Group-Japan was redesignated the Military Assistance Advisory Group-Japan, effective 7 June 1954. For the first time, the U. S. Advisory Group to Japan became a tri-service organization, with counterpart personnel not only for the Japan Defense Agency, but also for the Ground, Maritime and Air Self Defense Forces as well.

Since its establishment in 1954, there have been few basic changes

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*"In fostering the growth and self-sufficiency of Japan's forces, MAAG-Japan has had its trials. Reestablishment of the force was a formidable task in itself—considering that the Allied Powers stripped Japan's military force of "every soldier and every airplane" and completely broke up its military organization."*

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in MAAG-Japan organization. (See Chart.) Advisory Detachments have been withdrawn from the islands of Hokkaido and Kyushu, until today all Army personnel operate from a central headquarters in Tokyo, with the exception of one advisor to the Japan Defense Academy (which is a tri-service school)

*In training as radar technicians, members of Japan's Ground Self Defense Forces inspect a mortar locator they will use.*





Staff. The Chief, MAAG directs the overall activities, policies and procedures of the MAAG in carrying out its mission. He also advises and assists, or coordinates advice and assistance with his counterparts as appropriate.

Besides the normal duties of a tri-service military chief of staff, the Chief of Staff, MAAG-Japan, advises the Councillor of the Japan Defense Agency and the Chief of the Secretariat, Joint Staff Council, on matters of mutual interest to the MAAG and the Japan Defense Agency, or Joint Staff Council.

### ARMY SECTION, MAAG-JAPAN

OF THE three Service Sections under the Office of the Chief, MAAG, the oldest is the Army Section. At the time of Japan's establishment of the Defense Agency, the Japan National Police Reserve, trained by U. S. Army personnel and equipped with U. S. surplus World War II arms, was able to form ground defense units of regimental and division size. The progress made by these units has reached a point where the Japanese Ground Forces are no longer directly "trained" by U. S. personnel. Assistance and advice are provided through consultation and field trips.

The Chief, Army Section has as his counterpart the Chief of Staff, Ground Staff Office (Japan Ground Self Defense Force). This relationship allows discussion at the highest "ground force" level on matters of mutual concern. Coupled with this advisory relationship, the Chief, Army Section, MAAG-Japan, exercises responsibility for the efficient and expeditious planning, supervision and implementation of Army

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*"The present leaders in the Japan Defense Agency and the Self Defense Forces are educationally and intellectually well qualified for their positions. . . . They are developing into the type of leaders required to give Japan a highly effective defensive force."*

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aspects of the Military Aid Program in Japan.

The Operations Division, Army Section, advises and assists the Ground Self Defense Force to assure proper utilization of military aid for ground forces under the Military Aid Program. Advice and assistance or plans, operations, organization and training matters extend from the Ground Staff Office (GHQ of the Ground Self Defense Force) to individual Ground Force commanders. Counterpart relations exist with the Ground Staff Office Second Division (G2), Third Division (G3 Operations) and Fifth Division (G5 Education and Training).

Among the Senior Advisors in the Operations Division are to be found representatives of Infantry, Artillery, Armor, Airborne, and Army Aviation. This Division also lends assistance at various Ground Force Schools such as the OCS and Staff College (similar to the U. S. Army Command and General Staff College). Here arrangements are made and coordinated to send selected officers to various military schools in the United States.

The Logistics Division has counterpart relations with the Fourth Division (G4) of the Ground Staff

Office. Senior Advisors from Corps of Engineers, Quartermaster, Ordnance, Signal, Transportation, Chemical and Medical Corps advise on matters pertaining to the administration, management and training of the Ground Staff Office Fourth Division (G4) and all echelons and activities of these services throughout the Ground Self Defense Force, to include depots and technical service school activities.

Additionally, this Division supervises and coordinates programming and delivery of United States supplies and equipment to the Ground Self Defense Forces under the Military Aid Program. Through the media of field visits, it insures proper utilization and maintenance of U.S.-furnished materiel.

The Personnel and Administrative Division has counterpart relations with the Ground Staff Office First Division (G1, Welfare Section, Recruitment Section) and advises on matters pertaining to personnel, administration, special services and I&E activities. This Division is responsible for administration and personnel management for all Army military personnel assigned to MAAG-Japan.

The Office of the Judge Advocate advises and assists the Ground Self Defense Force on legal matters and is the Legal Assistance Officer of MAAG-Japan.

The Fuji School Advisory Detachment—consisting of six officers and six enlisted men under the direct control of the Chief, Army Section—is located at the Ground Self Defense Combined Arms School. This School may be characterized as a combination of the U. S. Infantry, Armored and Artillery Schools all under one roof.

Advanced training is given in the three arms, and combined training is given to the degree necessary to make the individual arms training effective. This Detachment advises the Commandant, his staff and faculty on doctrine, methods of instruction and overall operations.

#### NAVY AND AIR FORCE SECTIONS

THE Chiefs of the Navy and Air Force Sections, MAAG-Japan, perform essentially the same duties and have corresponding responsibilities within their Sections as does the Chief, Army Section, MAAG. Their counterparts within the Japan Self Defense Forces are Chief of Staff, Maritime Self Defense Force and Chief of Staff, Air Self Defense Force. Internal organization and composition of the two Sections similarly follow the general pattern of the Army Section.

Whereas the Army Section, MAAG-Japan discontinued its training of Ground Self Defense Forces some two years ago, the Navy and Air Force Sections have a continuing responsibility in this area. The Navy Section has several pilot instructors on duty at Maritime Self Defense Force Flight Schools and within the Section itself maintains a Training Division containing anti-submarine warfare, mine warfare and engineering and damage control advisors. A working arrangement exists between MAAG-Japan and Commander, Naval Forces, Pacific to lend additional assistance in training matters as required.

With the establishment of the Air Self Defense Force in 1954, the Air Force Section, MAAG-Japan, was given a formidable task—namely, building the Air Self Defense Force from zero strength with no air-



planes, to an effective defensive force.

To aid it in this task (in support of the MAAG mission) the then Far East Air Force was given the responsibility of conducting flight training for the Air Self Defense Force. Today the Fifth U. S. Air Force jointly with the Air Force Section, MAAG-Japan continues to train the Air Self Defense Force in pilot training, communications and electronics, maintenance and other related fields.

In fostering the growth and self-sufficiency of Japan's forces, MAAG-Japan has had its trials. Re-establishment of the force was a formidable task in itself—considering that the Allied Powers stripped Japan's military force of "every soldier and every airplane" and completely broke up its military organization.

Then, too, there was the no less

serious problem of building a defensive force in line with Japan's new National Constitution. The people of Japan, having themselves voted for the "renunciation of war" clause within the National Constitution, were apathetic toward the establishment of any type organization that tended toward the military.

However, their growing awareness to the possibility of aggression both within and without Japan, and a natural desire to assume a greater and ever increasing share in their own defense, finally brought about the realization that Japan must have its own military force capable of defending the country.

From a purely military standpoint, the re-establishment of Japanese defensive forces, after a lapse of more than seven years, was rendered difficult because of the dearth of qualified leaders and trainers.

*Members of MAAG-Japan and allied personnel are briefed by interpreters and officers during a command post exercise.*



The Imperial Japanese Forces were thoroughly dissolved in 1945, and popular apathy was such as to make potential leaders reluctant to participate in the newly established defense forces.

Meanwhile advances were being made throughout the world in concepts of modern warfare and military technology during which time the Japanese had little or no access to training literature to keep up with these advances. The natural tendency of the "old" military officers to revert to, or to rely on, the antiquated systems and methods of the pre-war Japanese Imperial Forces whenever they did not fully understand, or were not confident of, the modern concepts further increased the difficulties.

The present leaders in the Japan Defense Agency and the Self Defense Forces are educationally and intellectually well qualified for their positions. Conditioned by the training and experience of these past few years, they are developing into the type of leaders required to give Japan a highly effective defensive force.

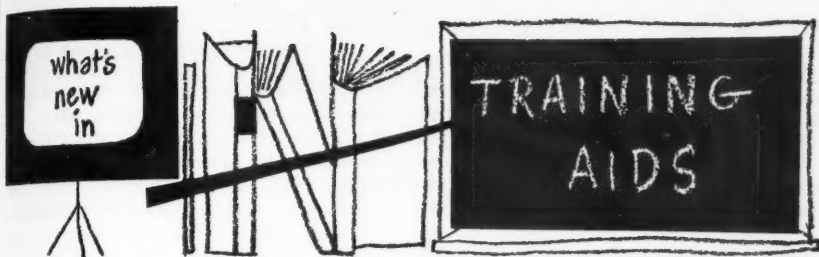
During the initial stages of Japan's organization of defensive forces, the United States provided nearly all "soft" and "hard" items. Today Japan provides all of its own "soft" items—i.e., food, clothing, field equipment, and the like. Among the materiel procured through Japanese industry are such items as vehicles, radio and other communications equipment, various types of ammunition, maritime vessels including destroyer types, trainer type aircraft, liaison aircraft and jet aircraft.

Under the provisions of the Military Assistance Program, the United States provides technical and financial assistance to Japan to assist in the manufacture and procurement of some "hard" items. An example of this is the recent contract let to provide 2½, ¾, and ¼ ton vehicles to the Ground Self Defense Forces. Under this agreement, the United States granted 33 million dollars for procurement of these vehicles in Japan. U. S.-manufactured vehicles currently in use by Japan's Ground Force will be reconditioned and rebuilt in Japan for delivery to Southeast Asian nations with whom the United States also has Military Assistance Programs.

Additionally, the United States and Japan have a "cost sharing" program for the manufacture of T33 and F86 jet aircraft. Under this program the United States provides a percentage of the aircraft parts, primarily the engines and certain electronics equipment; the remainder is produced by the Japanese.

As Japan's aircraft industry expands, the assistance and aid furnished by the United States decreases. A similar program exists for the manufacture of multi-engine antisubmarine aircraft of the latest model now operational in the U. S. Navy.

As Japan's Self Defense Forces continue to grow and become more self-sufficient, the mission and role of the Military Assistance Advisory Group-Japan, while not any less important, tends to contract. This in turn provides a basis for a gradual decrease in the amount of aid and assistance provided, in keeping with the spirit of the Mutual Defense Assistance Pact.



Keep your organization current with the latest training methods by referring to this section in each issue.

#### TRAINING LITERATURE

While the following new literature will be published shortly, units are cautioned NOT to requisition copies until receipt of automatic initial distribution or the items are listed in DA Pamphlets 310-3 or 310-4.

**Army Transport Aviation—Combat Operations.** FM 57-35 provides guidance for commanders, staff officers and others in planning and executing tactical operations supported by Army transport aircraft (fixed- and rotary-wing). It provides basic information concerning administrative and tactical planning and conduct of Army operations employing Army transport aircraft from battle group down to and including small reconnaissance patrols.

**Meteorology for Army Aviation.** TM 1-() contains information on basic principles of modern meteorology as applied to Army aviation. It acquaints the Army aviator with fundamental concepts of weather phenomena, weather facilities at his disposal, and how to use them.

**Revisions.** The following revisions will be published:

FM 5-134, "Armored Division Engineer Battalion"—a revision of 1954 edition.

FM 16-5, "The Chaplain"—a revision of 1952 edition.

#### TRAINING AIDS

**Training Films** recently released include:

TF 20-2561 "The Pentomic Army"  
TF 9-2535 "Operation of Winch, M135 Truck"

TF 9-2536 "Idle Mixture and Idle Speed Adjustment of Holley Carburetor 885 FFG"

TF 16-2513 "Self-Control"

TF 16-2514 "Courage—What Price Courage"

TF 16-2515 "Gratitude—Thanks to Whom?"

TF 16-2516 "Sacrifice—Sentimental Journey"

TF 19-2540 "Investigation of Narcotics Offenses"

TF 44-2360 "The Skysweeper—Artillery Drill"

TF 55-2312 "Helicopter Maintenance—Part V—Rotor Blade Inspection, Repair and Tracking" (H-19, H-34, H-37)

MF 21-8797 "Trainfire I—A New Course in Basic Rifle Marksmanship"

GF 19-32 "Riot Control Formations—Part III—Vehicles and Foot Troops"

AFIF 82 "This is France"

AFIF 221 "I&E Sportsreel"

#### ARMY EXTENSION COURSES

The following subcourses have recently been published:

#### NEW SUBCOURSES

**The Officer Qualification Record. TAG Subcourse 37, The Adjutant General's School, U. S. Army.** General instruction in initiation, disposition and use of the officer qualification record; entries and analysis of items contained in the qualification record.

**Adjutants General in Fixed Installations. TAG Subcourse 78, The Adjutant General's School, U. S. Army.** Organization and functions of the Adjutant General's section in fixed installations including posts, Army areas, and the Adjutant General's Office.

**Employment of Engineer Units. ENGR Subcourse 3, U. S. Army Engineer School.** Security of the engineer combat platoon, employment of obstacles, engineer unit support of the infantry battle group in attack, defense and retrograde movements.

**Company Tactics II, INF Subcourse 26, U. S. Army Infantry School.** Defensive and retrograde tactics of companies of the infantry regiment to in-

clude organization and conduct of component units, employment of weapons, fire support, and organization of terrain.

**Miscellaneous Tactics and Operations I, INF Subcourse 32, U. S. Army Infantry School.** Tactical employment of Army aircraft; introduction to airborne tactics; offensive and defensive operations under atomic warfare conditions; tactics of foreign infantry; use of federal troops in civil disturbances.

**Orientation to the Army Nursing Service, MED Subcourse 5, U. S. Army Medical Service School.** Historical highlights; Army Nurse Corps organization and structure; interdepartmental service relationships; qualitative nursing care of patients; establishment and maintenance of nursing standards; factors influencing staffing of nursing service.

**Sanitation of Military Installations, MED Subcourse 11, U. S. Army Medical Service School.** Military sanitation to include water supply and treatment, waste disposal, and mess sanitation; preventive medicine in disaster areas.

**Plant Planning and Maintenance III, MED Subcourse 212, U. S. Army Medical Service School.** Hospital plant planning and maintenance to include safety and fire prevention; administrative procedures; food service facilities; personnel economy in care of hospital patients; and guidelines in hospital planning.

**Civil Affairs X (Claims), TJAG Subcourse 55, The Judge Advocate General's School.** Investigation and processing of claims against the Government; the Military Personnel Claims Act (AR 25-100); the Military Claims Act (AR 25-25).

**Military Justice XV (Evidence), TJAG Subcourse 61, The Judge Advocate General's School.** Depositions; former testimony; memoranda; affidavits; documentary evidence; authentication of writings; judicial notice; foreign law; competency of witnesses; examination of witnesses; self-degradation; self-incrimination; privileged communications; illegally obtained evidence; wire tapping; credibility of witnesses; impeachment of witnesses; intents; stipulations; offer of proof; and waiver of objections.

#### REVISED SUBCOURSES

**Personnel Administration I, Part I, INF Subcourse 10, U. S. Army Infantry School.** Personnel management and ad-

ministration to include principles of personnel management; administrative organization (less supply) of infantry regiment, battalion and company; duty roster, individual sick slip; company files; DA publications and military correspondence; morning report, strengths, records, and reports; replacements; discipline, law and order; prisoners of war; graves registration; and morale and personnel services (to include decorations, medals, badges, citations, commendations, methods of recommending and awarding).

**Armored Unit Employment I, INF Subcourse 29, U. S. Army Infantry School.** Principles, characteristics, organization, techniques, and coordination of tank and armored infantry units in offensive, defensive, and delaying operations to include armored team in attack, principles of mobile and position defense, comparative roles of tank and armored infantry units in defense and delaying operations, and fundamentals for planning and conducting an attack by reinforced battalion of an armored division.

**Training and Methods of Instruction II, INF Subcourse 51, U. S. Army Infantry School.** Fundamentals of learning; methods and techniques involved in preparation; conduct and examination of effective instruction; the training estimate and various documents used in planning training; need for supervision of training.

**Staff Functions and Procedures, INF Subcourse 52, U. S. Army Infantry School.** Organization and duties of an infantry staff; preparation of combat orders and operation overlays; command post operation; staff records and reports—with Infantry regimental staff used as an example.

**Armored Unit Employment II, INF Subcourse 65, U. S. Army Infantry School.** Role and missions of armored units; characteristics of armor; organization of armored units; the forming of combined-arms forces for combat; principles of employment; employment of the reconnaissance company; employment of armored units in offense, defense and delaying action to include the reinforced battalion.

**Military Affairs III-IV, TJAG Subcourse 21, The Judge Advocate General's School.** A study of the status of warrant officers, including appointments, promotions, separation, and retirement.

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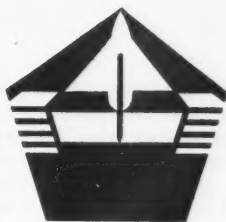
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# PARAGRAPHS From the Pentagon and the Field



Four major metropolitan areas—New York, Washington-Baltimore, Chicago and Philadelphia—will be protected by the Army's new Nike-Hercules missile system by June. The Hercules systems will be located at converted Nike-Ajax sites now being operated by elements of the U. S. Army Air Defense Command. The new systems will be capable of firing missiles carrying both high explosives and atomic warheads.



*Permanent promotion of Regular Army enlisted personnel will be reestablished beginning 1 July, according to Department of the Army Circular 640-2. Custodians of personnel records have been ordered to examine and verify permanent grade entries. Eligibility requirements and governing procedures will be spelled out in changes being drawn up to AR 624-200.*



Award of a \$51,500,000 contract for an additional quantity of amphibious M59 armored personnel carriers has been made to Food Machinery and Chemical Corporation, San Jose, California. The new contract is the largest in a series negotiated with manufacturers who designed the vehicle in 1952. The M59 is a speedy tracked land vehicle offering protection against blast and small arms fire. Capable of carrying 12 fully armed infantrymen, it can double as a mobile command post, communications center, or provide logistical support.



*Reduction in mapping errors to feet instead of miles is expected by the Army Map Service through use of Explorer, the Army satellite now orbiting the earth, in lieu of using the moon as a reference.*

*Scientists see the Explorer as an invaluable aid which will help reduce mapping errors in the Pacific from three quarters of a mile to 300 feet—and ultimately to precision of the order of 30 feet throughout the world.*



With the return of the 10th Infantry Division to Fort Benning, Georgia, from Germany this spring, designation of the 10th will be retired, to be replaced with that of the 2d, which will be retained on rolls of the active Army because of its historic background. Widely known by its "Indian Head" shoulder patch, the 2d Infantry Division was activated in October 1917. Since then, it has fought in 21 campaigns of World War I, World War II, and Korea.



*Department of the Army Circular 608-9 urges active support at all echelons of command for the Federal Voting Assistance Program. Although the program is phased toward voting in the general elections to be held this November, the importance of rendering assistance and providing impetus for voting in primary and special elections also is to be emphasized.*



A giant new radio transmitter at the U. S. Army Engineering Laboratories, Fort Monmouth, New Jersey, assisted in close tracking of the Army's Explorer earth satellite, it has been disclosed. The transmitter, named Space Sentry, bounced signals from the moon in calibration tests beginning 14 January and ending 28 January, to assure that Minitrack listening posts throughout the Western Hemisphere and in Africa would be tuned precisely to the same frequency. The tests also



checked the internal computing systems of the Minitrack stations, whose operations were vital for coordinated observation of satellites.

The Space Sentry was erected by the U. S. Army Signal Engineering Laboratories at Fort Monmouth in cooperation with the Naval Research Laboratory, Washington, D. C.



*Employee suggestions during Fiscal Year 1957 resulted in an estimated \$64 million saving to the Department of Defense. Awards for superior performance or specific achievement also went to 25,000 employees for ideas that benefited the Government by an estimated \$91 million. Altogether 242,000 beneficial suggestions were submitted, of which 66,750 were placed in effect, resulting in the \$64 million savings.*



The 2d Infantry Brigade, reorganized after service in both World Wars, has replaced the 4th Regimental Combat Team at Fort Devens, Massachusetts. With about the same strength as the combat team it replaces, the new brigade is a streamlined force especially tailored with two battle groups, a howitzer battalion, a reconnaissance troop, two engineer companies and two tank companies. These units are organized under the same pentomic structure adopted by Infantry divisions.



*Cold weather tests of Nike-Hercules and Lacrosse will be conducted by Canadian and U. S. Army personnel at Fort Churchill, Canada. The tests, beginning this winter and running through March 1959, are designed to determine effects of extreme low temperature on the complex component parts of the intricate weapons systems. The tests will not utilize missiles fitted with atomic warheads.*



Establishment of a National Pacific Missile Range is being accomplished by extending the guided missile range areas

supporting the existing Naval Air Missile Test Center at Point Mugu, California. The new range will be managed by the Navy for use of all branches of the Armed Forces. As part of the new establishment the southern portion of Camp Cooke, near Lompoc, California, is being transferred from Army to Navy responsibility. The new range will be complementary to the tri-service missile test range at Cape Canaveral, Florida. It will be equipped gradually over the next few years to support test and training operations of conventional guided missiles and the training operations of ballistic missiles.



*An improved, lightweight, compact, rugged sun compass with improved accuracy, versatility and operational range has been developed by the Engineer Research and Development Laboratories, Fort Belvoir, Virginia. The new unit provides means for land navigation at all north or south latitudes, and can be used with many navigational stars. A clock mechanism permits mechanical tracking of the sun or stars. Earlier models could not operate above 45 degree latitude, and could be used only with the North Star.*



Army fliers—who operate the world's largest fleet of helicopters as well as a wide array of fixed-wing aircraft—soon will have their first hard hats to protect against bumps and crashes. Installation of electronic equipment now is being supervised by the U. S. Army Signal Engineering Laboratories on 300 helmets borrowed from the Navy. These will be used as an interim standard design to undergo operational testing by fliers in Europe.



*Development of high-peak power microwave equipment that has transmitted up to 21,000,000 watts is a new achievement expected to contribute significantly to the perfection of Inter-continental Ballistic Missile detection apparatus. Because of extreme speed and unusual configuration, it is difficult to*

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*detect a ballistic missile with present-day radar equipment; consequently any development increasing the peak power that can be emitted by a radar is viewed as significant in development of future detection equipment. Cornell Aeronautical Laboratory, Buffalo, New York, has developed the new equipment under an Army Ordnance research contract applicable to U. S. Army missiles systems.*



An expendable aluminized fire protection suit, a lightweight hose that can be laid by a helicopter and an electrically driven submersible pump, recently underwent successful large-scale fire-fighting tests by the Research and Development Laboratories, Fort Belvoir, Virginia. The first tests showed that men wearing the suit over duty uniforms were able to stand within two feet of a raging forest fire for up to three minutes without discomfort, although exposed portions of their helmet liners were blistered. Soldiers inexperienced in fire fighting were able to couple 1000 feet of pipe in three and a quarter minutes while the hose was successfully laid by helicopter at tree-top levels in tests at the new Trinity Dam in the Shasta-Trinity Alps near Redding, California. The protective suit is made of flame-retardant treated aluminized kraft paper. It consists of parka with hood, face mask, leg sleeves and mittens.

*A menu to meet the needs of individuals who perform light duties, or those who must reduce due to obesity, now has been prepared. It is DA Supply Bulletin 10-250, Low Calorie Menu, which may be used by local commanders where a low calorie diet may be recommended by the surgeon.*



The Army is currently negotiating with civilian institutions for graduate training in astrophysics of a specially selected group of officers. As now planned, training will be for two years and will lead to a Master's degree. Officers with exceptional military and academic qualifications may have their training extended for an additional year in order to obtain Doctorates.

The course will include introductory graduate classes in such subjects as Optics and Spectroscopy, Thermodynamics, Kinetic Theory, Modern Physics, Astronomy, Nuclear Physics and Mathematics, as well as Astrophysics (physics of sun and stars).

Present indications are that these special courses can be established by the University of Virginia; and correspondence is being initiated with Harvard, Princeton, and California Institute of Technology, to explore the feasibility of establishing similar courses at these institutions. If negotiations are successful, the first group of officers will enter this new field of study in June.

## Official Notes

**COMPANY ORGANIZATION.** AR 220-70 outline the general provisions for organization of a company, smallest administrative unit in the Army.

**TRAINING POLICIES.** AR 350-1 set forth broad training policies and general guidance for commanders and heads of agencies charged with supervising or conducting military training in the Army.

**HIGH APTITUDE AREA SCORES.** AR 611-212 prescribe procedures for identification and reporting of enlisted personnel possessing high aptitude area scores or rare and unusual qualifications.

**COST OF LIVING ALLOWANCES.** AR 35-3060 cover details of allowances payable to members of the uniformed services on duty outside the United States for the purpose of defraying average excess cost of living at permanent duty stations.

**LIFE INSURANCE.** AR 600-101 prescribe uniform policy and procedures governing solicitation of military personnel on Army installations and activities for purchase of commercial life insurance.

**RESTRICTED AREAS.** AR 380-20 provide guidance with respect to defini-

tion and designation of restricted areas, and set forth procedures to be followed in case of violations.

**TRAINING AIDS.** AR 350-15 establish responsibilities for the programming, research and development, fabrication, production or procurement, indexing, storage, approval, and distribution of military training aids.

**AIR NAVIGATION.** AR 210-94 establish the responsibility of the post commander to protect the air space in the vicinity of Army airfields/heliports from the encroachment of obstruction to air navigation by means of locally enacted zoning ordinances.

**ARMY TERMINOLOGY.** AR 320-4 establish procedures for continuing review and revision of military terms in the Army vocabulary.

**MAIL INSTRUCTIONS.** AR 341-50 contain instructions relative to mailing matter to United States Army elements and activities, and certain citizens outside continental United States.

**OVERSEA USAFI.** AR 621-6 outline procedures governing the establishment, operation, disestablishment, and departmental transfer of overseas United States Armed Forces Institutes as a supplement to policies and guidance contained in AR 621-5.

**MEDICAL FACILITIES.** AR 40-200 establish policies and set forth general administrative provisions governing operation of Army medical treatment facilities.

**INVENTORY CONTROL POINTS.** AR 700-5 prescribe policies for management of material inventories through utilization of commodity type, functionally integrated, inventory control points.

**SURVIVAL, EVASION, ESCAPE.** AR 350-225 prescribe objectives, policies, procedures and responsibilities pertaining to survival, evasion and escape training. They do not pertain to the specialized training required to prepare individuals and units for unconventional warfare operations.

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## ***Armed Forces Display***

### ***"Power for Peace"***

THE NINTH annual observance of Armed Forces Day—occurring this year on 17 May—will be marked by ceremonies and programs at more than a thousand United States military installations nation-wide and overseas.

On Armed Forces Day, held annually during the third week of May, the Services render an accounting of their stewardship. Through community programs, parades, open houses, millions of Americans hear or see for themselves at first hand how the Army, Navy, Air Force, Marine Corps, Coast Guard and Reserve Components operate. They learn how the services instruct their members, maintain intricate equipment, train for any emergency that may arise.

NOT ONLY in the United States, but in some 70 foreign countries where Armed Forces are stationed, special programs are conducted. In the United States the public is shown how the Armed Forces serve as a "Power for Peace." In foreign lands millions of visitors are reminded that the United States Armed Services are "Partners for Peace."

Although major emphasis is on the primary components of the defense team, invitations to participate also are extended to organizations and programs related to the defense effort—U. S. Savings Bonds, Civil Defense, Red Cross, United Services Organizations, Civil Air Patrol, Selective Service.

Armed Forces Day replaces with one major event the various celebrations previously staged by the various services to mark their respective anniversaries. As such, it points up the close relationship of the services—together with other organizations and programs—which act as links in the chain of national security.



1958  
POWER  
FOR  
PEACE

THE U. S. ARMY—A KEY TO PEACE